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American Aviation

25c *The News Magazine of Air Transportation* June 1, 1948

Costs and Jets

IT HAS been more than obvious for a long time that this country will see no further development of civil transport and cargo airplanes unless some agency of government foots the very heavy development costs.

Thanks to Senator Brewster and Representative Hinshaw, chairman and vice chairman respectively of the Congressional Aviation Policy Board, companion bills are now before Congress which would provide for the development of civil transport aircraft adaptable for auxiliary military service.

The importance of this proposed legislation cannot be over-estimated. Every aircraft manufacturer who has developed a transport plane since the war has taken a terrific beating financially. And this beating revolves around the design, development, and testing of the prototype airplane.

We are not sure that the language and provisions of the Brewster and Hinshaw bills as introduced in both houses are satisfactory to everyone in the industry, but at least a solid start has been made toward cracking this toughest of all barriers to transport plane development. As it stands now the bill would place the authority and responsibility for design-to-construction of prototype transport and cargo aircraft in the Secretary of the Air Force who would act with the advice of a Civil Air Transport Evaluation Board.

Adoption of this legislation by Congress could usher in the era of jet transport within a few years. Hall L. Hibbard, vice president and chief engineer of Lockheed Aircraft Corp., as related in this issue, says a full jet transport airplane with a range of 3,500 miles carrying anywhere from 25 to 60 passengers and traveling in the upper altitudes at 500 miles an hour or more, can be built in less than three years for a cost of $12,000,000 for the first airplane, with successive sharp reductions in cost for successive models.

It is very clear that private industry cannot finance such projects. But from the standpoint of national defense alone, a jet transport program is an essential one.

In this connection we have been hearing disheartening reports about the Air Force and its continued

(*Turn to page* 8)

Directs Braniff's S. A. Service

R. V. Carleton, director of flight operations for Braniff Airways, has been assigned the additional responsibility of directing all flight and ground operations for the airline in Latin America. He has been with Braniff 17 years. Carleton is supervising construction of the company's $200,000 communication and navigational system to Lima, Peru, to which service will be inaugurated on June 4.

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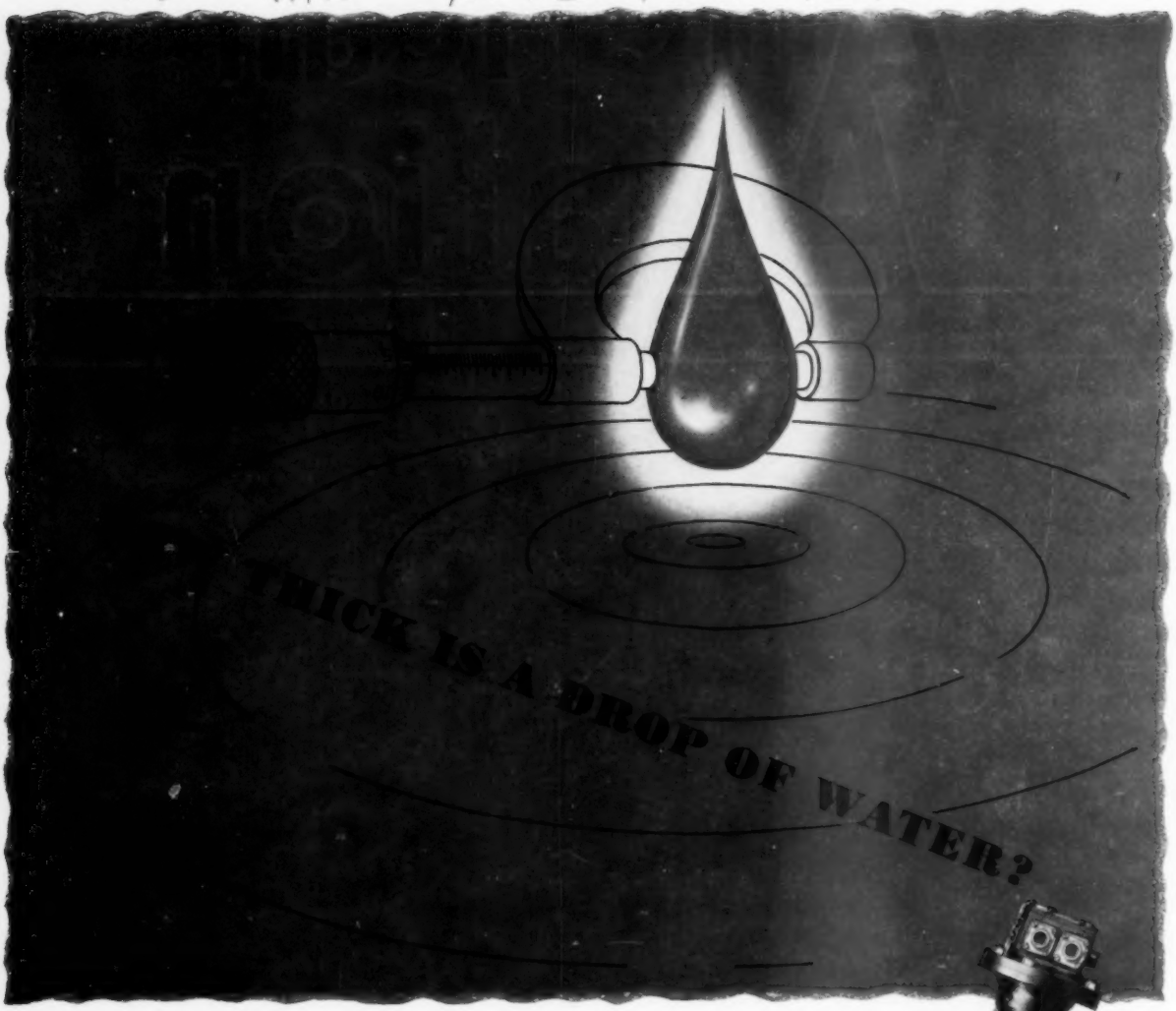
✓R v.12 June–Nov. 1948



HONEYWELL quality is the result of close attention to every engineering detail. The spacing of electrodes in tank units of the electronic fuel gage is an example of such careful engineering. Very narrow spacing would have simplified the design job but false readings might result from condensed moisture bridging the gap between narrowly spaced electrodes.

To guarantee the accuracy of Honeywell's capacitor type gage, Honeywell engineers actually measured the largest droplets of water that could be made to cling to the electrode surface, then spaced the tubular electrodes .138 inches apart to insure that no false readings would be caused by droplets bridging the gap.

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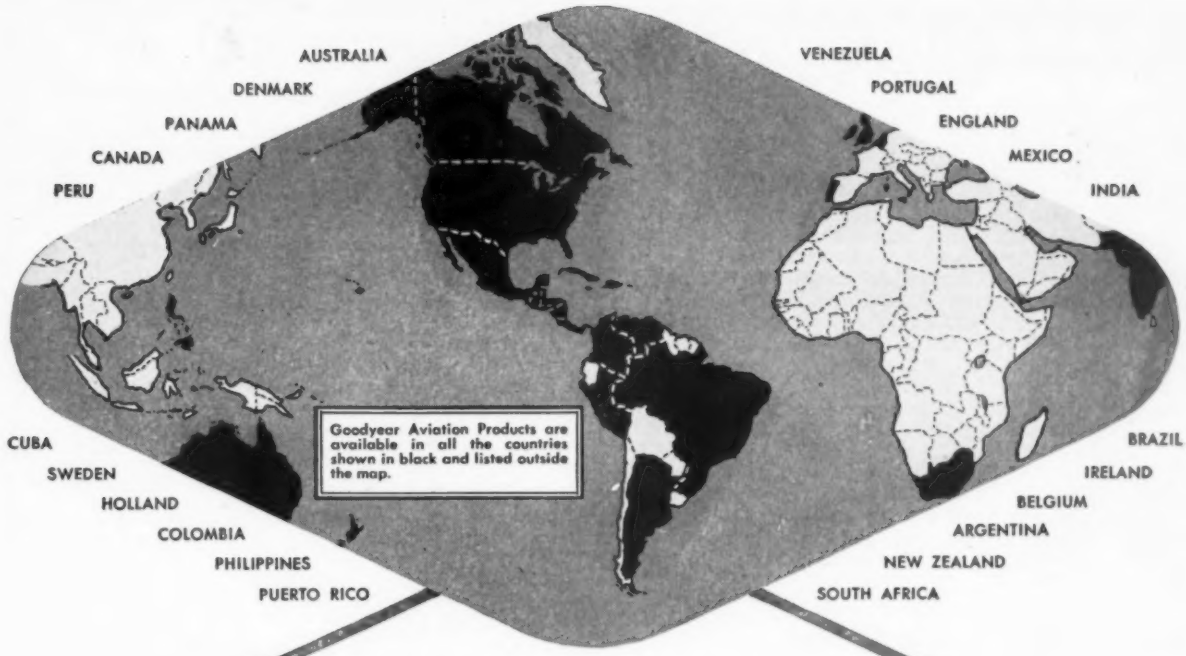

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FORTNIGHTLY REVIEW

No longer in the dream stage, a 500-mph turbojet transport could be flying nonstop transcontinentally or between New York and London by 1950, according to top-flight American engineers. However, the prototype would cost about $12,000,000. (Page 13)

A detailed program telling how the airlines can make a full-scale contribution to the nation's defense preparedness is outlined by Western Air Lines. WAL proposes peacetime establishment of activated Air Transport Reserve bases at key points on the airlines so that the great potential of reserve material within the airline industry will be fully prepared. (Page 15)

After several months of experience under its new Denver set-up, United Air Lines feels that it has the answer to efficient operations in its "simplified centralization." (Page 26)

1947 was the second full year of competition between foreign-flag and U. S. airlines flying across the Atlantic, and traffic figures just released by CAB are generally favorable to the U. S. lines. Of 194,113 trans-Atlantic air passengers last year, 73% went via U. S. airlines. (Page 37)

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Forrestal, Webb Control AF Funds

Secretary of Defense James V. Forrestal and Budget Director James E. Webb have been given major responsibilities in decisions relating to expenditure of additional $822,000,000 aircraft procurement funds made available when President Truman signed the $3,198,100,000 aircraft procurement bill on May 21. In signing the bill, Truman emphasized that Congress, in appropriating $822,000,000 more than he had asked, also included a proviso that "the funds shall not be spent without a finding by the President that the 'contracts let are necessary to the national defense' and that the procurement results in the 'maximum utilization of improvements in aircraft and equipment consistent with the defense needs of the U. S.'" Both Forrestal and Webb are on record as opposed to the additional funds which legislators felt necessary to start building toward a 70-group Air Force. However, limitations mentioned by the President are not expected to interfere seriously with AF signing long-range contracts.

National Board for Type Certificates

CAA has decided to establish a national review board to obtain uniformity in certificating aircraft types. TC's are granted by special boards of CAA officials in regional offices, in line with CAA policy to decentralize its work. There have been variations in regional decisions, and the national board hereafter will be available for appeals or settling of controversial questions. Charles F. Dycer, director of CAA's aircraft and components service, and his staff will serve on national review board. In addition, Delos W. Rentzel, who will take office as head of CAA on June 1, and A. S. Koch, assistant administrator for safety regulation will act in advisory capacity.

GE's $25,000,000 Jet Engine Center

A $25,000,000 center at Lynn, Mass., for development, testing and production of aircraft jet engines has been announced by General Electric Co. The new facilities have been under construction for the last two years. They include a test laboratory for jet engine components, test chambers for operation of jet engines at sea level conditions, low-temperature starting cells, test stand for turbo-prop engines, manufacturing and assembly facilities.

(Turn to page 6)

AMERICAN AVIATION

The News Magazine of Air Transportation

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WAYNE W. PARRISH

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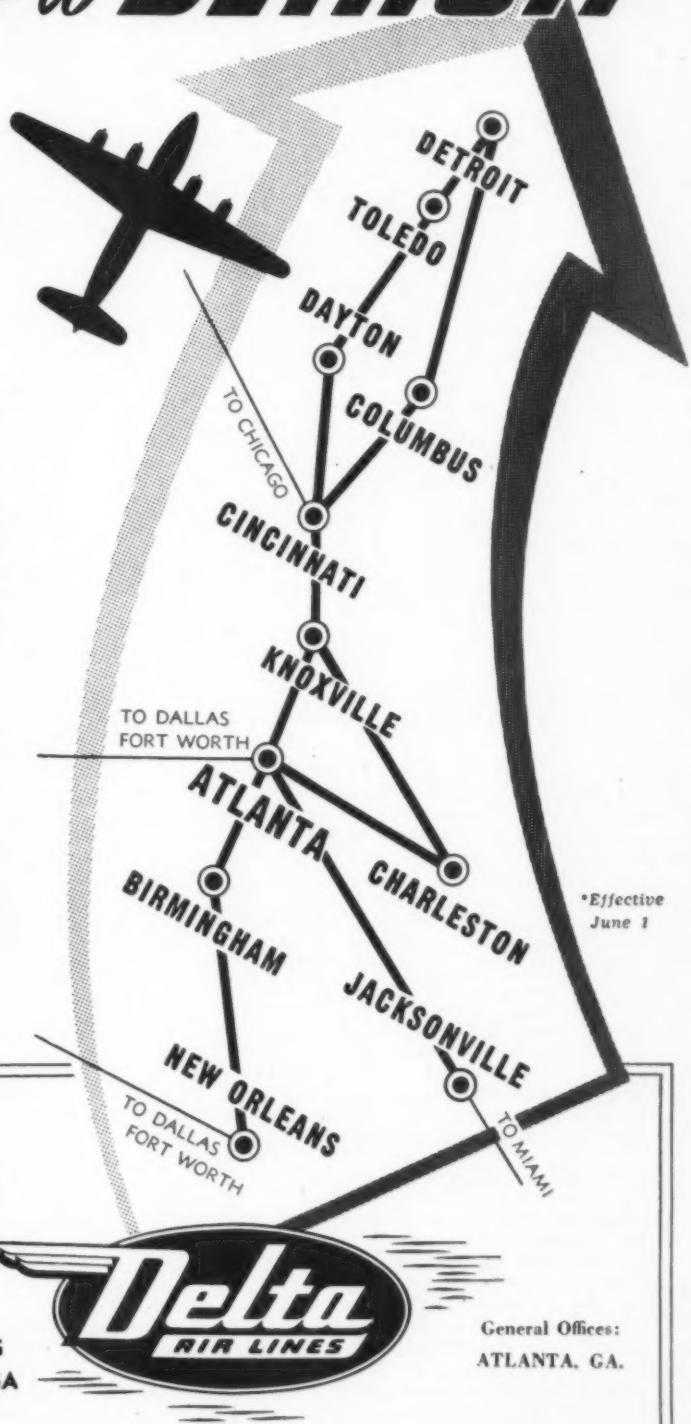

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FORTNIGHTLY REVIEW

(CONTINUED FROM PAGE 4)

6 New Members for Non-Scheduled Group

Six new members of the Non-Scheduled Flying Advisory Committee have been announced by Fred Lee, acting Administrator of Civil Aeronautics, as follows: Leighton Collins, editor of *Air Facts;* Harold Wood, Birmingham auto dealer; Henry Von Berg, president of Pathfinder Flying Service, Stockton, Calif.; Harvey Casebeer, president of the Butte, Mont., Chamber of Commerce; J. B. Hartranft, general manager of AOPA, and Lynn Bollinger, chief of Harvard University's Aeronautical Research Foundation. They replace one deceased member, and five whose terms have expired.

25 Aircraft Plants Added to Industrial Reserve

Munitions Board has announced that 25 aircraft or aircraft components plants are being added to the industrial reserve by invoking the national security clause in the sale of the plants. The clause provides that the plants cannot be altered in any way which might prevent rapid conversion to their designed use in event of an emergency.

The plants are: Aircraft Service Corp., Valley Stream, L. I., N. Y.; Aluminum Co. of America (seven plants), Newark, O.; Riverbank, Calif.; Maspeth, N. Y.; Trentwood, Wash.; Chicago; New Castle, Pa.; and Kansas City, Mo.; Bendix Aviation Corp. (three plants), South Bend, Ind.; Teterboro, N. J. (two); Curtiss-Wright Corp., Kenmore, N. Y.; Fairchild Engine & Airplane Corp., Burlington, N. C.; General Motors Corp., Kings Mills, Ohio; Hughes Tool Co., Houston, Tex.; Jack & Heintz Inc. (two plants), Bedford, Ohio; McDonnell Aircraft Corp., Memphis, Tenn.; Northwestern Aeronautical Corp., St. Paul, Minn.; Pesco Products Inc., Cleveland, Ohio; Republic Aircraft Products Div., Detroit, Mich.; Solar Aircraft Co., Des Moines, Iowa; Studebaker Corp., Chicago, Ill.; Waco Aircraft Co., Troy, Ohio, and Wright Aeronautical Co., Paterson, N. J.

Notes in the News:

The U. S. and Venezuela have signed a bilateral air transport agreement . . . **Luscombe Airplane Corp.** has received an NC on its four-place Silvaire Sedan. Plane sells for $6,995 FAF . . . Luscombe reports 1947 loss of $545,099, reduced to $255,099 through tax carry-back. Gross sales were $3,398,967, and company increased its portion of two-place market to 18.8% . . . **Industry Services Inc.** has been established at 810 DuPont Bldg., Washington, to represent companies in aviation and allied industries. Founders are Irving Taylor, a director of the Babb Co. and formerly with Douglas Aircraft, and Charles M. Cook, formerly Washington representative of Consolidated Vultee Aircraft Corp., . . . **Ryan Aeronautical Co.** has priced its standard Navion at $8,990 FAF San Diego, an increase of $240 necessitated by rising materials and accessories costs . . .

Names in the News:

Stanley Gewirtz resigns June 15 as executive assistant to the chairman of the Civil Aeronautics Board, and will be replaced by **Paul W. Cherington,** who has been CAB liaison representative to the Air Coordinating Committee and coordinator of special investigations for the Board. Gewirtz, who came to CAB with former chairman James M. Landis, will enter the private practice of law in Washington . . . **William Westlake,** war-time director of Army Air Forces public relations and recently assistant director of Congressional Aviation Policy Board, has been appointed chief of the public information division of the newly-organized Directorate of Civil Defense Planning . . . **Walter H. Beech,** president of Beech Aircraft Corp., is on an extended tour of South American cities in the interest of his firm's export sales program . . . **Russell B. Adams** was sworn in May 13 as a member of the CAB for a term ending Dec. 31, 1950, succeeding Harllee Branch, retired . . . **CAB Vice Chairman Oswald Ryan** has returned to work after a health checkup and a rest of several weeks . . . **Sidney F. Brody** will resign June 15 as vice president of Aeronca Aircraft Corp., but remains as a director. He has not announced future plans . . . **Artemus L. Gates,** who served as assistant secretary of the Navy for air in 1941 and undersecretary of the Navy in 1945, has been elected a director of Boeing Airplane Co. . . . **William T. Raymond** has been named director of Air Transport Association's government affairs department, succeeding J. W. Wadsworth, resigned. Raymond had been assistant director . . . **Gill Robb Wilson,** aviation columnist of the New York *Herald Tribune,* was elected president of Wings Club.

International

Canadian Regular Mail by Air

The Canadian government plans to carry regular letter mail by air at no increase in postage after July 1, according to press dispatches. The plan, which provides for routing of all letters of one ounce or less by air, was announced by the House of Commons.

Agreement for Clearing Airline Dollars

Facilitation of the clearance of international airline balances with assurances that U. S. Airlines will receive settlement in dollar exchange has been made possible through the signing of a contract between the Air Transport Association's Airline Clearing House, Inc., and the International Air Transport Association, and an agreement between the latter and the Bank of England. The clearing house of IATA and the Airline Clearing House, Inc., will each act as a member of the other association, with members of each paying their owed balances directly to the latter.

BOAC Buys 5 Connies from Irish

Five L-749 Lockheed Constellations have been purchased by British Overseas Airways Corp. from Irish Airlines for £1,575,000 ($6,300,000). The aircraft were to have been used by the Irish in the trans-Atlantic service which was recently abandoned by the new government. London reports stated that the planes will be used on the route to Australia. BOAC now operates six L-49 Constellations on the Atlantic.

ABA to Buy 10 Scandias

ABA Swedish Air Lines is reported to have signed a contract for 10 SAAB Scandias, powered with Pratt & Whitney engines. Deliveries of the twin-engined Swedish-built transport will start in August, 1949. Model purchased is the 90-A2 pressurized version.

SAS Reveals DC-6 Plans

Currently accepting delivery of a fleet of 10 DC-6's, seven of which will be used on its North Atlantic route, Scandinavian Airlines System has announced some of its plans for the new equipment. Beginning Aug. 1, SAS will inaugurate daily DC-6 service between New York and the Scandinavian capitals. Prior to this, beginning July 16, the company will run extra DC-6 flights westbound from Stockholm to New York via Oslo on Fridays and via Copenhagen on Mondays; eastbound from New York via Oslo on Mondays and via Copenhagen on Thursdays.

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EDITORIAL

(CONTINUED FROM PAGE 1)

sluggish attitude toward transport and cargo airplanes.

The Air Force got caught with its pants down when World War II arrived with a bang in 1941. It didn't have a single transport plane on order. By May, 1942, the transport situation was desperate and the Air Force had to draft half of the commercial transport fleet of the nation. Thanks to airline men in uniform, the Air Force built up a large and efficient world-wide fleet, but the fleet is reduced today to a mere skeleton.

The Air Force is giving too much lip service to the well-grounded thesis that transport and cargo planes are as essential in military operations as fighters and bombers. It is close to being back in November, 1941, in its thinking and planning. It agrees that transport planes are important—but it isn't enforcing the words with action.

If the Air Force will throw its weight behind the Brewster and Hinshaw bills, this country can have a progressive program benefiting commerce and military alike. By all odds it is essential to start moving on jet transport planes—not the compromises of jet power plants on conventional airplanes which England is experimenting with—but airplanes designed for jet power from the start.

Strange Actions

LAST YEAR the Civil Aeronautics Board was in a great dither about the absolute terrain proximity indicator. With a big whoop-dee-doo, it suddenly ordered all transport airplanes equipped with this miraculous new piece of equipment. A few weeks ago it rescinded the regulation just as all of the airlines were rushing installations to meet the hurry-up deadline. Cost: anywhere between $500,000 and $1,000,000. Moral: hasty actions by uninformed laymen.

Now the CAB is in a similar stew and the actions are even stranger. This is the regulation announced April 14 requiring a third crew member with a flight engineer's certificate for all DC-6 and Stratocruiser transports after next December 1. Now we don't know whether there should or should not be a flight engineer on these airplanes; it's quite a technical question, but we do think the moves leading up to the sudden decision of April 14 to be very strange indeed.

Here's why: the oral argument on the case was conducted by CAB Members Landis, Young and Ryan. Two of those members have since resigned. The decision was made by CAB Members O'Connell, Branch, Jones and Lee. Not one of the members who participated in the hearings voted on the decision. Not one of those who voted on the decision had participated in the hearings. This in itself is an astonishing development.

Another curious fact: The former CAA Administrator, T. P. Wright, was opposed to the regulation. It was shortly after Wright left Washington that the proposal was shoved into and through the reorganized CAB. The new CAA Administrator had not been confirmed. It has happened before, and apparently it has happened in this instance, that CAA subordinates have pressured their pet projects through for action while the boss is absent or lacking.

Utility--the Old Story

NO MORE searching and realistic appraisal of the personal aircraft and fixed base operation field has ever been made than the study completed early in May by Lynn Bollinger and Arthur Tully, Jr., of the Harvard Business School. Their "Personal Aircraft Business at Airports," reviewed in the last issue, should be read with keen interest by local operators, aircraft manufacturers and all others concerned with the personal airplane.

Ever since World War I there have been expansive promises and predictions made about the big private flying market to come—some day. But many a wise old airman who has seen or experienced the cycles of booms and popular fancies since the early days, has maintained that there is no truly mass market for the personal airplane until this airplane has genuine utility.

Bollinger and Tully bear this out in terms which may cast gloom over the local operators' field but in terms which all those who want to see constructive aviation growth must appreciate. A few years ago government officials and some others were predicting 400,000 and even 500,000 personal airplanes a few years after the war. But as has happened so many times in the past, the predictions reckoned without the utility that must be present in any vehicle which crashes the mass market.

The personal aircraft field has developed very encouragingly relative to what it was before the war. Sales are definitely better. But realistically, the sales are quite insufficient to maintain the 8,000 or so local operators who today are trying to eke out a living in this phase of aviation. Bollinger and Tully point out that only the federally-subsidized GI flight training program is holding up the fixed base field to its present boom size.

One encouraging sign, small though it may be, is the increased use of four-place types such as the Beech Bonanza and the Stinson. Flying farmers in the midwest and west are new on the horizon, also.

But when the GI training disappears, as it will in due course, what then? We hope the new CAA Administrator, Del Rentzel, gives the Bollinger-Tully book a thorough reading and comes up with a constructive idea for CAA to stimulate the building of unconventional utility airplanes which people can use with ease without having to become expert pilots. There's been a lot of wild predicting in the aviation business in the past. A little Bollinger and Tully realism will be the best thing that can happen—and the key to a growing, sound personal aircraft field in due time.

WAYNE W. PARRISH

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BACKGROUND & TRENDS

Another Increase? Another airline fare increase is in the talk stage. Reason is constantly rising costs. Wage increases alone have more than offset the two 10% boosts placed into effect since the war ended. Gas costs continue to rise and at least one airline will be paying 40% more for gas in July this year than in same month of '47. Aircraft and engine parts costs, especially the latter, keep mounting.

Progress: *American and foreign airlines flying the North Atlantic last year carried more passengers than traveled first-class on steamships to and from Europe during 1937, which is considered to be the last normal prewar year. In 1947 the airlines carried 194,113 passengers both ways (see story on page 37) while in 1937, steamships carried 172,870 first-class passengers. Airlines still have to go some to equal total (first, second and third class) 1937 steamship traffiic to and from Europe, which totaled 662,283.*

European Boom: Travel between U. S. and Europe will be 25% greater this summer than last, according to Willis G. Lipscomb, v.p.-traffic and sales of Pan American Airways, just returned from a survey trip to seven European countries. Factors contributing to a big tourist season are the European Recovery Program, the Olympic Games, devaluation of the French franc, and increasing availability of good hotel and restaurant facilities.

Still Flying: *Non-scheduled passenger carriers are still flying freely coast to coast although CAB is finally getting around to investigating violations. Scheduled airlines are feeling the competition. One nonsked advertises regularly in San Francisco and Los Angeles offering $99 direct overnight service to New York. At least four lines are doing regular business on a daily basis.*

Perspective: For 12 months ended January, 1948, the average passenger load of the feederlines was 5.45 passengers per plane mile, compared with average of 19.48 passengers for trunklines. However, the feeder loads are surprisingly high when compared with loads of trunklines a decade ago: in 1938, even after they had been operating for several years, Braniff had average loads of only 5.02 passengers, Northeast 3.42, Inland 1.43, while average of all domestic operators was 7.02. Basic difference is that in 1938 a considerable number of smaller transports were in operation so that airlines had average capacity for 13.91 passengers, while most feeders today are using the 21-passenger DC-3 because it is most practical plane available.

Plane Radios: *Indication of increased use by personal flyers of airways facilities is fact that while production of personal planes during 1947 was less than half that of 1946, the number equipped with two-way radio at the factory more than doubled. Number of personal aircraft sold dropped from 34,568 in 1914 to 15,338 last year, but 6,908 (45%) of the 1947 planes were equipped with two-way radio sets and only 3,065 (less than 9%) were so equipped in '46. Part of the rise is attributable to the marked shift from two-place to four-place aircraft.*

British-French Pool: The British and the French have been doing some talking about pooling of their airline services, it is indicated from London. How complete a pooling arrangement is contemplated is not known. According to one source, the principal route likely to be affected is the South Atlantic (Air France and British South American Airways).

Rising Insurance Coverage: One in every four or five insured airplanes is involved in accident each year to tune of about 30% of plane's value, Jerome Lederer of the Flight Safety Foundation pointed out recently. Premium volume has reached total of $25,000,000 for aircraft coverage, almost five times the figure 15 years ago. Lederer declared that aviation insurance has suffered from increased cost of repairs, higher court claim verdicts, higher medical expenses, and inability of the nation to provide physical protection for current large number of aircraft—all factors justifying higher rates.

Long Leases: *Slighting reference to long leases held by airlines at La Guardia Airport was made by Howard S. Cullman, chairman of the Port of New York Authority, in recent speech before Aviation Writers Association. Cullman said he did not think the Authority could conduct a sound airport business if it were confronted with schedules of flight charges frozen to a fluctuating dollar for periods ranging up to 30-40 years. But in same speech, he stated that the Port Authority had a 50-year lease to operate La Guardia and New York International (Idlewild).*

High Praise: Boeing's Stratocruiser came in for some unusually high praise from two Britishers recently. Sir Miles Thomas, deputy chairman of the board of British Overseas Airways (which has ordered some of the planes), said "there is no directly competitive type, so far as we know." Vernon Crudge, BOAC's Atlantic division manager, said "anyone who doesn't have the Stratocruiser on the North Atlantic just won't be in the big league." Apparently laid to rest were rumors that BOAC might switch types because Stratocruiser deliveries were behind schedule. Comments were also interesting in view of the intensive campaign in Britain to have their airlines "fly British."

Air Mail Costs: *Domestic airlines in fiscal year '47 received 3.9c per air mail letter carried for the Post Office Dept.,. out of a claimed PO expenditure of 9.49c per letter, an analysis of PO's cost ascertainment report shows. The report, just released, shows that PO revenue from air mail was 7.03c per letter against expenditure of 9.49c, or a "deficit" of 2.46c per letter. Air mail revenues in '47 were $54,356,782, expenditures $73,341,207, the deficit $18,984,425.*

No Merger: Jack Northrop, president of Northrop Aircraft, has stated that there is "not one iota of truth" to the rumor of a merger of Consolidated Vultee and Northrop.

Distress Channel Needed: *An important need in international operations, CAB believes, is a high frequency international radio distress channel and a dependable listening watch ("guard") on that channel. Frequency of 8280 kcs. is sometimes used for this purpose, but such use is unofficial and the channel is often crowded by other stations who use it as a calling frequency. International designated distress frequency of 500 kcs. is not well suited to aircraft purposes.*

Aviation Travelgram: High Western Union officials have assured Colorado's Division of Aeronautics of its cooperation in establishing a special rate and handling of private flyer telegrams which notify home folks of safe arrival following cross country flights. W. J. Bain, director of Colorado aeronautics, hopes to have adopted a plan similar to prewar "Travelgrams" which would permit pilot, for nominal sum, to wire only the word "Arrived" and his name back to point of departure.

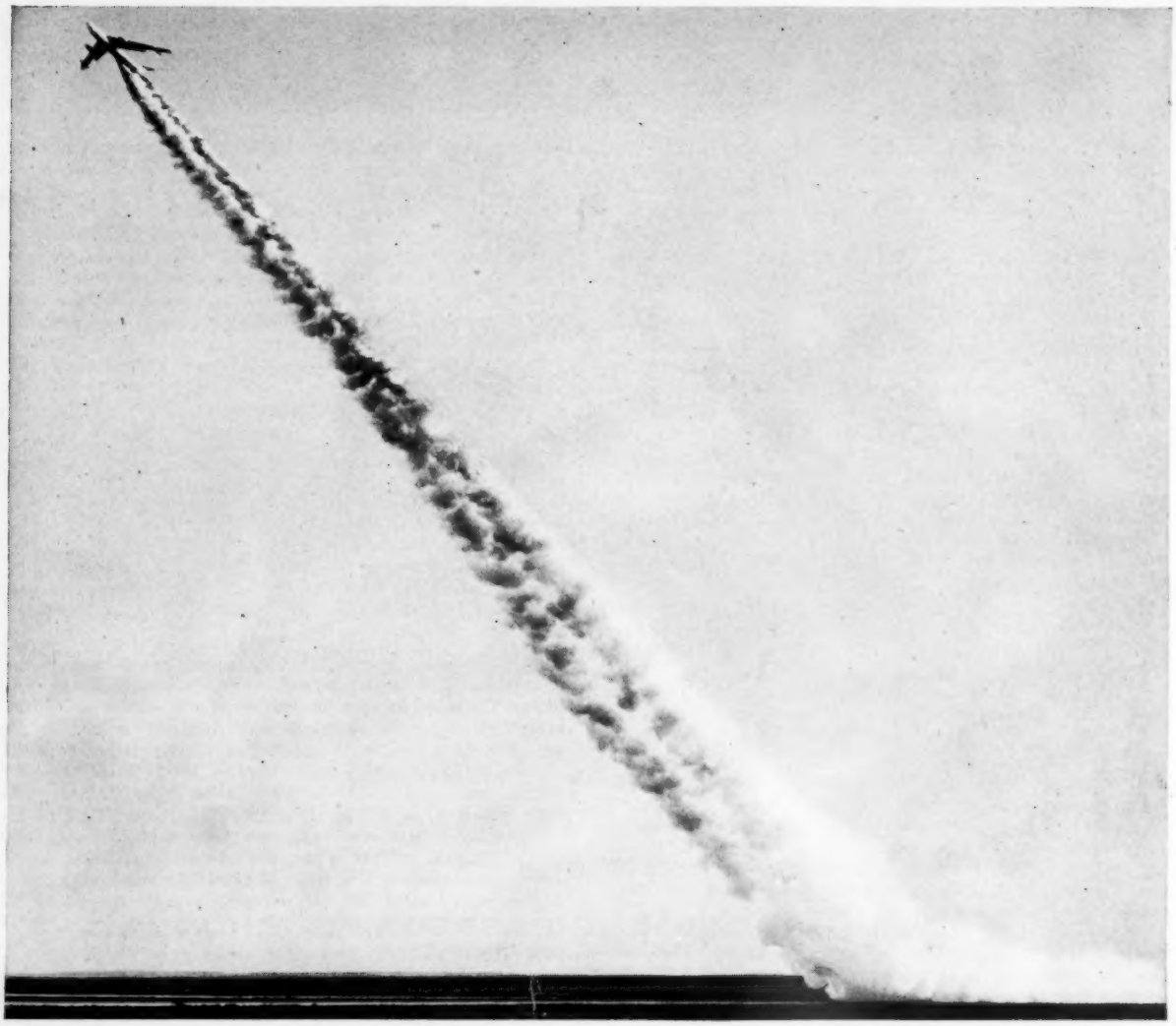

Photo shows Boeing XB-47 Stratojet, 12 seconds after standing start, on its first rocket-assisted takeoff.

Whoosh! It's America's "hottest" bomber!

This big bomber, leaping skyward with incredible climb, is the new Boeing XB-47 Stratojet—startling performer among the Air Force's new planes.

As large as a B-29, the Stratojet hurls itself into the air like a projectile. Eighteen built-in rocket units and six jet engines give it a maximum of 42,000 pounds thrust. In level flight it streaks along like a giant arrow, with ten tons of bombs.

The Stratojet's top speed and other performance data are carefully guarded secrets. But its swept-back wings and tail surfaces, trim fuselage and streamlined nacelles are a clear indication of the speeds for which it was designed.

That the Stratojet is flying today—as realization of the need for air defense reaches a peak—is a tribute to the foresight of the U. S. Air Force and to Boeing's advanced planning. It is the first large airplane of such radical design to be built—and it made its initial test flight only 18 months after first drawings were put on paper.

More than five months of Boeing tests have proved that, in the Stratojet, America has developed one of the world's most significant defense weapons.

For the Air Force, Boeing is building the B-50 Superfortress, XB-47 Stratojet, and C-97 Stratofreighter—for the Army, the L-15 Scout liaison plane —and for six major airlines, the twin-deck Boeing Stratocruiser.

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Established June 1, 1937 **AMERICAN AVIATION** Volume 12 Number 1

500-mph Jet Transport Seen Possible by 1950

By WAYNE W. PARRISH

The 500 mile-per-hour turbojet transport airplane, capable of flying nonstop transcontinentally or between New York and London, is no longer in the dream stage.

Two top-flight American engineers say that such a transport can now be built with existing knowledge of jet propulsion, and could be flying in 1950.

Out of jet progress of the past few years, these conclusions can now be made:

1. **The range problem** of the turbojet power plant has been largely conquered.

2. **The intermediary step** of the propjet (jet power plant with propeller), earlier thought necessary, is now being sidestepped or subordinated by top engineers. Turbojet, or pure jet, progress has far outpaced propjet development, at least for long-range aircraft of high speeds.

3. **Adaptation of jet power** to existing conventional transport airplanes is unsatisfactory. Jet power must go into modern framework specifically designed for the purpose.

4. **From two to three years** is necessary to build an all-jet transport with the initial plane costing about $12,000,000.

5. **For speeds of 500 to 550** miles per hour, there is no limitation on size of the passenger-carrying airplane.

6. **Seat mile cost of operation** will not be excessive, as earlier feared.

One of those who is confident that a long-range jet transport can now be built is Hall L. Hibbard, vice president and chief engineer of Lockheed Aircraft Corp., Burbank, Calif., who is no novice in the jet field.

"We are not reaching into the unknown when we talk about building a jet transport," Hibbard says. "We are taking what we now know about jet power. A lot of research is not necessary. We can go right ahead and do it now. All we have to do is to make use of the jet fighter knowledge that we have experienced in this country."

Hibbard said he realized that there still exists a feeling that jet power has no range and that it can't power transport planes carrying people. But he said it can be done and that jet power must be built into a modern framework and not be applied to old-type airplanes.

"We can now build a transport plane to cross the Atlantic nonstop with enough holding power of safety reserve at the other end. The range is there, and you can carry passengers on a seat-mile basis comparable to that of present day airplanes. The prototype will cost about $12,000,000 and it will fly between 500 and 550 miles an hour. It will carry as many passengers as conventional airplanes—the plane has no limit on size."

A jet transport plane can now be built with a range of 3,500 miles, he said, using power plants now available. He mentioned specifically the TG-190A turbojet developed by General Electric which has 5,000 lbs. of thrust. The TG-190A is being used in the North American P-86.

Hibbard said the plane could be built in from two and a half to three years.

"Fine strides have been made in fuel economy. There is no possible doubt now about the engines."

Passenger Factors

He said there were three important factors to be considered for transporting passengers.

One is the higher wing loading which would enable the plane to go through bumps easier at high speeds.

The second is the swept-back wing which would benefit flying through rough air.

The third is the aspect ratio of the wings, which would benefit passenger comfort.

"This jet transport which we now know we can build would be able to go much faster through rough air than present airplanes and with equal comfort. Naturally a jet transport would have to slow down in rough air in the same manner as conventional airplanes. A drive flap would probably be added to slow down quickly and this would not be uncomfortable to passengers.

"Such a transport would be pressurized, of course. Jet loves altitude. Flights would be made somewhere between 35,000 and 40,000 feet altitude. There would be double windows and double windshields."

Hibbard said a propjet transition period is not necessary, although propjet would probably be fine for such existing airplanes as the Constellation and the DC-6, and possibly new small feeder planes.

He said an all-jet airplane can be slowed down for landing quite satisfactorily although the approach speed might be a little higher than today's airplanes. Such a transport can use existing landing fields, needing runways of not more than 6,000 feet for general operations.

The jet airplane would be simpler in design and cost than conventional airplanes.

"With the plane we know can be built today, you can carry passengers twice as fast at the same fare," he said. "The long-range outlook in jet power is for much cheaper transportation.

"Jet is not worth anything on conventional airplanes. The framework must be specially designed for it."

Similar Views

Another top engineer, Robert E. Hage, senior group engineer for Boeing Airplane Company, has ideas closely aligned to those of Hibbard. In a new book published by the Princeton University entitled "Jet Propulsion in Commercial Air Transportation," he sets forth his views.

"In the author's opinion," he says, "a medium range turbojet transport carrying 25 to 30 passengers and flying at a cruising speed of 500 to 525 miles per hour is an extremely likely development for use on the routes of the major airlines between major centers of population by the close of the year 1950."

Looking into the future some 20 to 30 years Hage says "a rocket or ramjet propelled transport may enable a passenger to cross the United States from coast to coast in an elapsed time of one to two hours. The ramifications of such a Buck Rogers ship are as yet unexplored and unknown, but the feasibility of a turbojet or turboprop transport to fly the same distance in five hours is quite probable within the next decade."

Later on he says: "In the United States as well as England the turbojet engine is approximately two years ahead of the turboprop in its development. In the turbojet field many promising designs both here and abroad are now available and are continually being improved both as to reliability and thrust output.

"The Rolls Royce Nene, Allison I-40 and General Electric TG-190 engines will offer a range of maximum static thrust output of between 5,000 and 8,000 lbs. during the next five years. The turbine propeller outlook is not as promising, and, with the exception of small 1000-2000 horsepower engines like the Armstrong-Siddeley Mamba and Bristol Theseus, the likelihood of a larger practical engine for commercial application is not promising before 1952."

Prototype Aircraft Bill

This country's lag of 18 months to three years behind the British in development of a jet propelled commercial transport aircraft was providing the impetus on Capitol Hill to rush through the remaining days of the 80th Congress a bill which would authorize a government program for building both passenger and cargo type transports.

The bill hit a snag during hearings last week when it was announced that the Administration, through the Budget Bureau, would oppose the legislation. This announcement came as a surprise to supporters and advocates of the measure because the President's Air Policy Commission had strongly recommended in its report "Survival in the Air Age," a program of government aid. Efforts were to be made to remove Administration opposition.

Generally the bill was supported from all quarters in and outside of the government. Frederick B. Lee, acting Civil Aeronautics Administrator, urged that responsibility for the program be transferred from the Secretary of the Air Force to the Secretary of Commerce. Navy's Assistant Secretary for Air John Nicholas Brown urged delaying action until the next Congress so that there might be time for more serious study after stating "The Navy has no direct interest in the development of types suitable primarily for commercial use." But if the program is laid down, he wanted consideration given to development of seaplane transports.

C. V. Whitney, assistant secretary of the Air Force, supported the intent of the measure and urged that the emphasis be placed on economical, commercial types suitable for civilian use with the military aspects being given second consideration.

Joseph J. O'Connell, Jr., chairman of the Civil Aeronautics Board, highly endorsed the objectives of the bill and urged that the responsibility and the initiative of the Civil Air Transport Evaluation and Development Board, which would be created under the bill, be expanded.

Leading aircraft manufacturers or their representatives urged immediate enactment of the measure after all had declared that private industry, in its present financial condition, could never hope to undertake the construction of a prototype aircraft. Under questioning by Sen. Owen Brewster, chairman of the Congressional Aviation Policy Board, all of these witnesses said that time was of the essence because the British are 18 months to three years ahead of this country in jet transport developments.

Among the manufacturers who testified were: Robert E. Gross, president of Lockheed Aircraft Corp.; Lawrence B. Richardson, president of Fairchild Engine and Airplane Corp.; Arthur E. Raymond, vice president, Douglas Aircraft Co. and Albert E. Lombard, Jr., military sales manager for Consolidated Vultee Corp. Lombard told the committee that his company had suffered a loss of $46,000,000 in the development and production of the Convair Liner on the basis of 178 planes on order.

30 Years— In 1918, E. Hamilton Lee went to work for the Post Office Dept. as an air mail pilot. Today "Ham" Lee is still flying as a captain on United Air Lines' Los Angeles-San Francisco route. As the air mail service celebrated its 30th anniversary on May 15, Postmaster General J. M. Donaldson, left, presented Capt. Lee with a scroll symbolic of 30 years' service as an air mail pilot. Second Assistant Postmaster General Paul Aiken, right, looks on.

Rehearing Asked on Engineers

According to estimates, CAB's requirement that flight engineers be carried on DC-6s and Stratocruisers after Dec. 1, 1948, may cost the airlines $20,000,000 a year.

If this added cost is necessary for safety, the airlines are willing to assume it, but they claimed that the matter merited more consideration than the cursory treatment it received last fall. CAB members Landis, Young and Ryan heard oral argument in the case. With Landis and Young leaving the board, and Ryan away for a rest, the decision was issued by members O'Connell, Branch, Jones and Lee. The airlines wanted the whole matter reconsidered.

C. R. Smith, chairman of the board of American Airlines and president of American Overseas Airlines, summed things up by telling the board that adoption of the regulations was "one of the most drastic actions taken in the history of the board," and that "it seems quite probable that the economic consequences of these regulations have not been given due consideration . . . The cost of compliance has not been presented to the board."

AA and AOA, Smith said, had been under the impression that a proposed draft of the regulations would be issued for comment before becoming final, but this had not been done.

"The cockpit of the DC-6, with the aid and approval of the manufacturer, the operator and the government, was arranged to make it most convenient for the two men who must be responsible for the operation of the airplane. That requirement was foremost in mind throughout the stages of airplane design, construction and licensing, and the DC-6 cockpit is the best arranged for two pilots of any airplane available today.

"In a cockpit so very carefully designed, you will not contribute to safety to require that a third man sit between the pilots and reach over and under and between the pilots to perform mechanical duties during flight."

He added that the "mechanical duties" to be assumed by the flight engineer are "nowhere defined" nor is there "any basis in the transcript of the hearing to provide such a definition. We earnestly suggest to you that any feasible definition is quite impossible for a DC-6 operation. This consideration not only brings out the essential mistake of imposing the flight engineer requirement, but also exemplifies the danger that this and other features of the regulations may breed 'feather-bedding' practices which would be most undesirable."

WAL Tells How

Airlines Can Aid Defense

By Fred Hunter

A program outlining in detail how the airlines can make a full-scale contribution to the nation's preparations for defense has been forwarded to the Air Transport Association for its consideration by Western Air Lines.

Western proposes the peace-time establishment of activated Air Transport Reserve bases at the various key points on the airlines so that the great potential of reserve material within the airline industry will be fully prepared and available for proper assignment in the next emergency.

In relating its proposal, the airline calls attention to the fact that U. S. Air Force Regulation 20-44, dated June 28, 1946, requires that plans for expansion of the civil air carriers in case of war are to be prepared and maintained in current status and that this national policy was restated in the report of the President's Air Policy Commission by the declaration that "contract arrangements specifying the equipment and service to be furnished to the Military Transport services should be made now."

It suggests that a separate and available Air Transport Reserve organization would be an effective method of making use of the capacity and responsibility of the airlines in achieving this end.

The proposal, which was written by Arthur F. Kelly, assistant to the president of WAL and a lieutenant colonel in the Air Transport Command during the war, illustrates the pattern that could be followed by detailing the organization of an Air Transport Reserve base in conjunction with WAL at its headquarters at the Los Angeles Airport.

This organized Air Transport Reserve base would be set up for the purpose of training, operating, planning and assisting in research for military air transport purposes for the area of Southern California and available for all qualified personnel in the Air Transport Reserve.

Nucleus of the installation would be a regularly assigned Military Air Transport unit to direct and guide the operation with the technical assistance of the reserve unit.

Proposed Activities

The proposal lists the following operational activities for the reserve unit:

1. Operate scheduled training transport flights on a simulated basis, consistent with the range and objectives of its geographical location; perform any special mission flights consistent with its capacity and on a basis not in conflict with commercial transport services.

2. Provide air transportation services between military installations consistent with the facilitation of the Air Transport Reserve program.

3. In conjunction with the airframe manufacturers of this area, establish plans, policies and procedures for the acceptance and delivery of aircraft.

4. Establish training and "check out" procedures with the airframe manufacturers on all new and modern aircraft.

5. Establish an administrative training program to include the simulated range of command responsibilities as directed by the Commanding General of the Air Force and the War Department.

6. Establish a program of training differentiating between command on the ground and command in the air, this program to include definition of command control of aircraft and personnel engaged in flight, not of a tactical nature, and to study standards of equipment for long-range winter or over-ocean flying.

7. Establish a program of training on methods, standards and procedures for the evacuation by air of the sick and wounded.

8. Establish a program of training and study of problems at ports of aerial embarkation and debarkation, including agriculture, customs, immigration, health, in-bound shipments and the related items of processing military and civilian personnel.

9. Under existing policies, study, develop and investigate the coordination necessary to place military air transport in its proper perspective in relation to other civil and military agencies responsible for our national air policy.

10. Establish a program of training and advanced study on the administration and handling of expedite cargo and priority personnel.

11. Establish a program of training and instruction on the Civil Aeronautics Act of 1938 with special emphasis on the foreign and domestic responsibilities pertaining to the postal service and the civil air carriers' position in the national defense.

12. Institute a training program on established plans, programs and requirements of flight operation procedures.

13. Within the capacity of personnel and equipment, participate in, study and instruct on all phases of air research and development pertaining to air transport operation.

14. Formulate, study and institute a training program on practices relative to flight operations, traffic control, adaptation of equipment and other related developments, including advanced technique of ILS, GCA, fog dispersal, etc.

15. Study and establish a training program on established procedures for briefing and dispatching of aircraft, departing and arriving from the continental United States to or from foreign ports.

16. Within the capacity of the installation, institute a practical training program for all MOS (Military Occupational Specialists) declared essential for a working cadre capable of immediate military transport operation in case of emergency.

17. Formulate, study and institute a training program on (a) weather services, (b) communication services, (c) air rescue services.

Western's proposal points out that its facilities at the Los Angeles Airport are ample for the establishment of the reserve training unit and that no doubt the same situation exists on the other airlines. The airline has practically all the necessary equipment so that little additional expense would be entailed for the government.

Similarly the airlines have the military transport experience gained from the last war through both the large numbers of personnel who served with the Air Transport Command and the Naval Air Transport Service and the contractual operations of the airline managements.

Western points out that in the next war there won't be the time to prepare that marked World War II and it submits its program as a practical plan to have men and machines immediately available, facilities ear-marked and ready and an operational plan that can be immediately integrated into the overall master plan of defense all set to go.

PLANES

Convairs Are Coming

When American Airlines finally was given authority by the CAA in May to operate its new Convair Liners in regular passenger service, a procedure which required six months, it was all set to put the planes into use with a minimum of further delay.

At presstime, the company was preparing to announce definite schedules. It was also running small, novel newspaper ads. Only copy in the ads: "American's Convairs Are Coming!"

During the 60 days preceding completion of CAA's prescribed 100-hour proving run, American had run off a three-phase program of flight training, ground training and scheduled cargo flying, during which seven Convairs assigned to the training project flew 325,000 miles.

During this program, 120 pilots received transition training in the new aircraft in 10 ground school and flying courses at the American Airlines training center at Ardmore, Okla., and more than 2,200 agents, mechanics, fleet service personnel and salesmen received ground school training. After all this, AA figured integration of the Convair Liners into its fleet, replacing its DC-3's, should be a relatively smooth operation.

Continental Air Lines was to receive delivery of its first Convair Liner this week, and expects by June 15 to have all

its flight personnel trained to operate the new twin-engine 40-passenger transports. The 50-plus captains and first officers of the CAL system have been "rotating" in small groups through the American Airlines training center at Ardmore, Okla., for flight training on the Convair Liners, and supervisory personnel from Continental's maintenance and overhaul base at Denver also have been taking training at Ardmore. The company hopes to have five of the Convair Liners in service by summer's end. It now operates a fleet of 12 DC-3's.

A "new look" was due to appear in the Caribbean skies this week or next with the introduction of the new Convair Liner on Pan American Airways' Miami - Havana and Miami - Nassau routes. As other Convairs are delivered, they will be put into service on routes criss-crossing the Caribbean, along the north coast of South America and through Central America and Mexico, eventually replacing most of PAA's DC-3 aircraft.

DC-6 Sleepers Over Pacific

Douglas DC-6 sleepers made their debut in trans-Pacific flying on May 21 when Philippine Air Lines put its new airliners into scheduled service between San Francisco, Hawaii, and Manila.

The first line to offer regular sleeper service in the Pacific, PAL is charging a berth fare of $75—$50 less than the trans-Atlantic fee although the distance is more than twice as great. The Philippine carrier expects the lower berth fare to popularize its sleepers for the longer trips.

PAL's schedules cover service into Hong Kong and Shanghai, but the DC-6's will not be flown beyond Manila. DC-4's replaced by them will serve other Orient points, connecting at Manila.

Five DC-3's to CATC

Northwest Airlines has delivered the first of the five DC-3's it has sold to China Air Transport Association, and other deliveries by air are expected to follow at the rate of one a month. Stripped of extra weight and equipped with six auxiliary fuel tanks, the planes are able to use long-range cruising procedure and fly the longest segment of the Orient route—2,500 miles—without refueling. The DC-3's normal cruising range is 1,000 miles. They follow Northwest's short-cut route via Alaska and the Aleutians to Shanghai, where a CATC pilot takes over and flies them on to Hong Kong.

Combination DC-6's: Pan American-Grace Airways has converted its three DC-6's from sleepers into combination type ships similar to those purchased by KLM. The combination planes have 32 day seats in the forward cabin and 16 seats which can be made up into eight births in the aft cabin.

Lighted Signs—New illuminated gate signs have been installed by United Air Lines at Chicago, and will be put up at other points on the UAL system. Lettering and numerals in the neon signs are visible from a distance of 100 ft., day or night. Illuminated globe on top, displaying a red numeral against a white background, can be read from four directions. White neon lighting illuminates the edges of the sign. Flight number and destination cards can be easily changed. Stewardess pictured is Louise Legris

LABOR

NAL Emergency Board

As the strike of National Airlines' union pilots dragged into its 102nd day with no signs of settlement, the White House acted. An Emergency Board was created by President Truman on May 15 to investigate the strike because of the possibility that it might spread.

The action was without precedent in management-pilot relations, in that the board was created after the strike had occurred, and not before. Thus, some legal questions arose.

Of primary interest was the question of whether National's Air Line Pilots Association pilots would be sent back to work pending board recommendations. Normally, when an emergency board is named before a strike, the parties remain in status quo as far as the former employment contract is concerned.

In the present case, a National Mediation Board spokesman said the emergency board probably would attempt first to terminate the strike and get the union pilots back on the job. However, the board can only recommend, and neither side need accept the recommendations (ALPA had refused to accept board recommendations in the TWA strike). An airline attorney said the board had no power to stop the strike or order National's union pilots back to work. This could only be done by agreement of the parties, he felt. And G. T. Baker, National president, again told his non-union pilots they were assured of their jobs.

When the NAL strike threatened several months ago, NMB did not ask appointment of an emergency board because it held that a strike would not interrupt interstate commerce to a degree that a large section of the country would be deprived of essential transportation. A few weeks ago, however, ALPA President David L. Behncke informed the White House that the strike might spread to all terminals served by NAL. Because such a move would leave a large section of the country without essential transportation, NMB last month recommended appointment of the board.

Named to the Board by President Truman were: Col. Grady Lewis, Washington attorney; Walter V. Schaefer, law professor at Northwestern University, and Curtis W. Roll, former associate judge of the Indiana Supreme Court.

The Board began public hearings in Washington, D. C., on May 25.

10 Agreements for ALSSA

Although not yet two years old, Air Line Stewards and Stewardesses Association (affiliated with Air Line Pilots Association) is making rapid progress It has agreements to show for its work.

The ALSSA, which negotiated its first basic agreement with an airline (TWA) just a year ago, on May 29, 1947, is one of the youngest unions in existence, but it is moving ahead fast. In addition to TWA, it now has basic agreements covering the stewards and stewardesses serving on nine major airlines and is negotiating with half a dozen others.

Airlines with whom ALSSA has agreements include: TWA, Eastern, American, Northwest, Colonial, C&S, Braniff, Northeast, Mid-Continent, and Capital. Victor J. Herbert, of Chicago, acting president, hopes to have all the trunklines on the dotted line by the end of 1948.

One of the better contracts (from the ALSSA standpoint) is the one signed with Capital Airlines in March. It provides a base salary of $165 to $230 per month after six years for 70 hours of flying, and further provides $2.00 per hour for each hour of flying in excess of 70 per month. When only one hostess is used on a DC-4 aircraft, she receives additional compensation of $15 per month. Normal monthly flight time is held to be 85 hours, with a 90-hour absolute monthly maximum and 255 hours as the calendar quarterly maximum.

Other features of the contract include: increase in expenses, actual cab fare at base stations whenever a flight arrives or departs between the hours of 12 midnight and 6 a. m., holding time at the rate of $1.30 per hour for each hour spent on the ground with passengers in excess of one hour, protection of seniority rights, and right to grieve and appeal.

ROUTE CASES

New England Proposal

Northeast Airlines, which is operating a trunk-type air service in New England at a recurring loss, and Wiggins Airways, which is authorized to operate a New England feederline service but has never started because it felt the route mileage awarded it was not enough, got together last month and worked out what sounded like a good deal for both.

Under an agreement signed by the two companies, subject to CAB approval, Northeast would retain those parts of its present system which it believes to be best suited to serve on a trunkline basis, and Wiggins would acquire those parts of the present Northeast system which the carriers believe might best be served on a local and feeder basis. The latter routes, added to those Wiggins already is authorized to operate, would give that company a system serving more than 60 New England cities, many of which are presently without air service.

"We have carefully analyzed the problem of New England air service, and after full consideration of the public interest, the interests of the New England communities, and our own companies' practical operating problems, we believe that the plan we propose is the most logical and feasible means by which we can promote a sound and efficient air transportation service in the New England area," said George E. Gardner, president of NEA, and Joseph Garside, president of Wiggins, in their joint statement.

Commenting further on the agreement, Gardner and Garside said:

"Many years of operating experience in the region have demonstrated that there is real need for both types of service contemplated . . . It is not possible under existing certifications, however, for either Northeast or Wiggins to furnish both types of service with full efficiency and equality. Much of the service needed in New England is of extremely short-haul character and cannot now be provided as fully as desirable without penalty to the longer-haul service. Conversely, short-haul services are penalized by the full satisfaction of the long-haul needs. The two types of service require different types of flight equipment and ground facilities, and each has its own peculiar scheduling problems which are frequently in conflict."

The agreement contemplates that there will be no interruption of existing service in connection with the transfers. That is, all service now provided by Northeast would be continued until such time as the CAB approves the agreement and would be continued thereafter until Wiggins is prepared to begin operations over the routes to be transferred to it.

The proposed transfer probably would not be made, however, without objections from some other carrier or carriers operating into New England. Anticipating this, the CAB Public Counsel already has filed a motion with the board asking it to afford any qualified applicant an opportunity to make a showing as to why it, rather than Wiggins, should be allowed to operate the feederline parts NEA proposed to transfer.

Flight Demonstrator—This operating model of a Douglas DC-4 is currently being displayed in store windows in cities along Capital Airlines' route to show the public procedures followed during take-off and landing of a big transport. The model plane lands and takes off, landing gear extends and retracts, the propellers whirl while plane is aloft and stop when it is on ground, and wing flaps are lowered and raised at proper time. Below the miniature panorama, two screens describe the steps a pilot would take in order to fly the plane in the same relative positions as the model. Shown above are Joseph E. Butler, of Airtronic Research, designer of the display; Hostess Kitty Donegan of Capital Airlines; Capt. Howard Ross, Capital pilot; Johnny Bradford, NBC announcer. Picture was taken during recent television broadcast.

FINANCIAL

$13 Million Airline Loss

To everyone connected with the air transport industry it had been evident that the domestic trunk airlines had lost money on operations for the first quarter of this year; the only question was how much had they lost? Last week, the bad news came out.

Total operating revenues of the 19 carriers for the three-month period amounted to $79,685,346, against total operating expenses of $93,521,429. This subtracted out to a net operating loss of $13,836,083 for the quarter.

The fact that this was $5 millions under the 1947 first-quarter deficit of $18,779,246 was little cause for optimism, for the fact remained that airline operating expenses had a head start over operating revenues, and the latter were slow catching up.

There was some encouragement, however, in the fact that revenues had increased by some $10 millions the first quarter of this year, as compared with the 1947 quarter, whereas operating expenses had increased by only about $5,000,000. This was just the reverse of the trend over a good part of last year, when expenses were tending to run ahead of revenues, despite the fact that the latter were rising.

Thirteen of the 19 carriers showed increases in operating revenues for the 1948 first quarter, with the major gains being recorded by Eastern and TWA. The latter increased its total operating revenues from $8,303,391 in the 1947 first quarter to $13,073,882 in the same quarter this year, and Eastern increased from $12,198,204 to $17,737,876.

Increased passenger fares and increased cargo revenues were largely responsible for these gains.

It also was encouraging that half a dozen of the carriers had actually held operating expenses down to below those for the first quarter of last year, notable among these being American, Capital, United and Western.

Revenues in virtually every category were up during this year's first quarter, as compared with the first three months

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of 1947, with passenger revenues up about $7 millions, express revenues about $5 millions, mail up about $1 million and freight up about $1.5 millions.

Major operating losses for the quarter were those of: American, with $4,880,969; United, with $3,675,090; Northwest, with $1,962,852; TWA, with $1,202,250, and Capital, with $1,076,346. First-quarter losses of the same carriers last year had been $4,684,686, $5,131,595, $1,898,490, $3,437,791, and $2,215,508, respectively.

Eastern showed net profit after taxes of $1,121,000, compared with $564,000 in first quarter of 1947.

$1,100,000 Coincident

May 28 promised to be Black Friday for TWA. On that date, the company's $1,100,000 loan installment was due to Equitable Life Assurance Society, and it wasn't going to be paid.

On May 18, the company had hurriedly filed an application with Reconstruction Finance Corp. for a $10,000,000 loan to obtain funds to pay off Equitable and to meet other expenses. A default would mean that the entire Equitable $40,000,000 loan, plus $8,000,000 of other loans, would come due immediately. Noah Dietrich, TWA director and personal representative of Howard Hughes (who holds 45% of TWA's stock through Hughes Tool Co.), was in New York attempting to get necessary waivers from Equitable to make the RFC loan possible, and indications were that he wasn't having much luck. In any event, it seemed unlikely that RFC could or would act in time.

Suddenly, on May 21, the Civil Aeronautics Board came to the rescue. Acting on a TWA application filed in April, it proposed to raise the company's international air mail pay temporarily to $6,300,000 a year, from $3,000,000. This, coincidentally (board members insisted), worked out to an increase for the first four months of the year of $1,100,000—the amount due Equitable.

Noting TWA's "critical financial condition," the board, in a show-cause order, proposed to give the carrier, from Jan. 1, 1948, 60c per airplane-mile without reference to base poundage, and computed on a 30,000-mile basis. TWA's current international rate is 75c per ton-mile to European gateways, and 35c per plane-mile beyond.

CAB would not, however, give TWA an increase for the period before last Jan. 1. It said that between Feb. 5, 1946 and Dec. 31, 1947, TWA's operating costs "appear unreasonably high in comparison with other trans-Atlantic carriers," and that the higher level of TWA's non-mail revenues "appears to have been adequate to cover a reasonable differential between its costs and the costs of other trans-Atlantic carriers." Added CAB: "In the absence of evidence that higher mail pay is required upon the basis of operating results reasonably attainable under honest, economical and efficient management, an increase in the mail rate (prior to Jan. 1, 1948) cannot be justified by reason of critical financial condition."

Had TWA defaulted on the loan payment, Hughes' controlling stock interest would have been placed in a trusteeship. It was likely that the insurance company and the banks which have extended credit would have appointed two trustees and Hughes Tool one.

What effect the new mail rates would have on the RFC loan application was not immediately clear. It did seem evident to some observers that Howard Hughes was not in a hurry to put any more money into the company (Dietrich said in New York that he knew of no intention on the part of Hughes to give up his interest in the airline). Hughes Tool had loaned TWA $10,000,000 in 1947, later giving up its right to take repayment in cash, thus indicating that it will be converted into stock.

TWA's board had named a committee to study all phases of the company's finances. It was clear that although Black Friday had passed, the airline, which last year lost $8,079,761, still had knotty financing problems ahead.

Cal Eastern Bankrupt

In the hearings on the air freight rate case last winter, counsel for one of the independent air freight carriers made the prediction that unless CAB acted quickly to decide the rate case and the freight forwarder case many of the independent lines would be forced into bankruptcy. Last fortnight, with the rate case already decided and the forwarder case decision not more than a few weeks off, the prediction began to come true.

First casualty among the larger non-certificated cargo carriers was California Eastern Airways, which suspended operations May 17, a few days after filing for bankruptcy in Federal Court in Wilmington, Del. After filing of these proceedings, as one phase of a move to improve Cal Eastern's financial situation, the company's insurance policies were cancelled and it had no alternative but to suspend operations and furlough all its employes except for a skeleton staff.

All cargo in the hands of Cal Eastern at the time of the suspension was turned over to Slick Airways, which leased two C-54 aircraft from the bankrupt carrier.

Andre de Saint Phalle, president, said California Eastern retained some hope that operations could be resumed if a favorable decision should be forthcoming in the freight forwarder case, or if the company's financial problems could be worked out through a refinancing proposed in conjunction with the bankruptcy petition.

Under this plan, said to have been given tentative approval by most Cal Eastern creditors but which still would have to be approved by the stockholders, the freight carrier would issue new Class A and preferred stock and offer creditors the opportunity of taking preferred stock in payment of their claims.

CAB CALENDAR

June 28—Hearing on proposals of Pan American Airways for consolidation of its Pacific route certificates. (Docket 2953 et al.) Examiner Ralph L. Wiser. Place and hour to be announced.

June 30—Hearing on CAB Investigation of Fare Differentials in Pan American Airways' Miami-San Juan, Miami-St. Thomas Tariffs. (Docket 3274). Examiner Frank A. Law, Jr. Tentative. Postponed from June 23.

Aviation Calendar

June 1-6—All-Woman Air Show, Miami, sponsored by Florida chapter, Ninety-nines.

June 6-11—SAE Summer meeting, French Lick Springs Hotel, French Lick, Ind.

June 8-10—Airport Management Conference, Texas A&M College, College Station. (Dean Howard W. Barlow in charge.)

June 14-15—Airlines Medical Directors Association annual meeting, Royal York Hotel, Toronto, Canada.

June 16-18—Aero Medical Association 19th annual meeting, Royal York Hotel, Toronto, Canada.

June 17-18—Aviation Distributors and Manufactures Ass'n mid-year meeting, Grand Hotel, Mackinac Island, Mich.

June 21-25—American Institute of Electrical Engineers summer meeting, Mexico City.

June 22-23—Annual Ohio State Aviation Clinic, Bowling Green State U., Bowling Green.

June 27-30—National Aeronautic Association annual convention, Hotel Radisson, Minneapolis.

June 30-July 1—National Soaring Contest, Elmira, N. Y.

July 2-9—Second National Air Tour Week sponsored by United Pilots and Mechanics Ass'n (1101 Vermont Ave., N. W., Washington, D. C.)

July 6-7—NASAO executive committee and directors meet, Colorado Springs, Colo.

July 16-24—1948 Road Show, ARBA, including airport construction equipment, Soldier Field, Chicago.

July 17-18—Sixth Annual All-Dixie Air Show and National Airplane Trading Day, Chattanooga, Tenn. (Chattanooga Flyer's Club, sponsor).

July 17-18—Fourth Annual Southern Michigan Aviation Show, Reynolds Field, Jackson, Mich., sponsored by Jr. Chamber of Commerce.

July 31-Aug. 8—International Air Exposition (New York's golden jubilee), New York International Airport.

Aug. 18-20—SAE West Coast meeting, Hotel St. Francis, San Francisco.

Sept. 4-6—National Air Races, Cleveland.

Sept. 13-17—National Instrument Conference and Exhibit, Convention Hall, Philadelphia. (Sponsored by Instrument Society of America, Pittsburgh).

International

June 1—Opening of Second ICAO Assembly, Palais de Nations, Geneva. (About three weeks).

July — —ICAO North Pacific Regional Meeting, Honolulu or Vancouver.

Aug. 24—I C A O African-Indian Ocean Regional meeting. (Site not chosen).

Aug. 27-Sept. 3—Federation Aeronautique Internationale, Cleveland.

Sept. 7-12—Society of British Aircraft Constructors show, Farnborough.

Bigger Quarters for a Bigger Job

In conjunction with its eleventh anniversary, AMERICAN AVIATION has moved into new and larger home offices, located at . . . .

1025 Vermont Avenue, N. W., Washington 5, D. C.

TELEPHONE — STERLING 5400

TO keep pace with the interests of our readers we have made a number of expansion moves since the magazine was established in 1937. In staff strength and office space we long ago became the largest producer of specialized aviation publications.

AMERICAN AVIATION, with its associated publications, has grown steadily with the industry. Our new expansion reflects both our confidence in the industry, and its need for our services.

We invite you to visit us next time you are in Washington.

American Aviation Publications

AMERICAN AVIATION MAGAZINE • AMERICAN AVIATION DIRECTORY • AMERICAN AVIATION DAILY • AIR TRAFFIC GUIDE

Bright Future for 'Copter Found in L. A. Experiment

By WAYNE W. PARRISH

There seems never to be a shortage of new thrills and experiences in aviation.

And flying the helicopter mail route is one of the latest and best.

I was told by Clarence Belinn, president of Los Angeles Airways, to report to the Post Office Terminal Annex in downtown Los Angeles a few minutes before Flight 210b was to depart for Municipal Airport at 10:55 a. m. So I hied myself to the post office, took the elevator to the roof, and stepped out. No helicopter in sight, no activity of any sort. Only a square bit of surface on the roof the size of a prizefight arena to indicate that anything akin to aviation might be about.

But I didn't have to wait long. Out from nowhere appeared the Sikorsky S-51, hovered briefly over the rooftop, and settled down on its appointed spot. Out from a freight elevator came a truck with some sacks. In a short minute sacks were unloaded and loaded. The pilot waved for me to hop in. In another few seconds I was strapped in next to a batch of mail sacks and with a whiz we were off the roof and over the city.

It was so simple and fast that I had to pinch myself that I was experiencing something new in flying. In a short 11 minutes we settled down on Municipal Airport and I was having a cup of coffee with Belinn to find out more about this air taxi.

Thirty minutes later I was ready to accompany Pilot Charles Clark on Route 31j which makes 12 brief stops in an hour and a half. The mail was heavy and I soon found myself playing postman and keeping the sacks in order ready for dropping off at Anaheim, Bellflower, San Pedro, Long Beach, Newport Beach, Santa Ana and other places south of Los Angeles.

It was a lot of fun. But it was an education, too. The S-51 flies between 500 and 1,000 feet and it's closer to automobile driving than flying because you have to dodge radio towers, smokestacks, oil wells, power lines and everything that sticks into the air. It's amazing how many obstructions there are when you fly along at low altitude.

But the helicopter is a marvelous vehicle. It just plops down anywhere. All but three of the 12 stops were made right inside towns on small fenced-off portions of vacant lots which have been designated by the super-name of heliports. Three landings were made on small airfields just outside the towns.

What impressed me most is the facility and speed with which the helicopter can arrive over a heliport, drop down for a quick exchange of mail sacks, and whiz off again to the next stop. Some of the stops were only four minutes apart.

At each stop a man or woman was waiting with a mail sack or two. Usually there were a few curious people watching. Trucks and cars stop on the streets while the occupants watch this strange machine make its mail stop.

In an hour and a half we made an 80-mile circuit and delivered and picked up a lot of mail. Long Beach was a major stop with four sacks off and three or four on. If anyone has any doubts about the volume of mail being carried, he ought to take a look-see at Los Angeles Airways. It carried 71,000 lbs. of mail the first eight days of May. All I can say is that I helped pitch off some of it to a bunch of towns I never heard of before.

Los Angeles Airways has been operating eight months now. It has 28 employees including 8 pilots. It operates five S-51's, and makes 250 landings a day. It has maintained a 95% operating record which is very good considering the fogs in the Los Angeles area.

The Post Office is rightfully proud of the service. There's no doubt whatever about the way the helicopter has speeded up business mail in the area. Local towns and firms like it.

New Mail Pouch—When Capital Airlines' inaugural flight left New Orleans for New York last month, it carried mail in a new-type fire-resistive and waterproof pouch developed for the Post Office Department by the Holton Corp., New Orleans. Frank Fairley, N. O. postmaster, is shown handing mail in the fiberglas pouch to Guy Springer, Capital's general cargo manager.

One of the best uses of the helicopter is in expediting mail between airport and downtown post office. When the TWA Connie comes in from New York in the morning with pouches of registered and other "hot" mail, these special pouches are transferred direct from the Connie to the helicopter which has parked itself nearby. In 11 minutes the pouches are downtown and the helicopter is back at the airport before the Connie has been fully unloaded. Then the helicopter takes on the regular air mail.

There are three routes in addition to the downtown-airport shuttle of 12 round-trips daily. One route covers the San Fernando Valley. Another goes east to such points as Pasadena, Riverside and Pomona. The third goes south.

Pilots average 70 hours a month and are paid a flat $500 monthly salary. Heliports are rented or leased by the company, and the company has to fence them in and maintain them. The CAA has been unusually helpful in getting the helicopter service going without unnecessary red tape and Belinn says he hasn't received a single complaint because of helicopter noises. He purchased maxim silencers for the machines but has never uncrated them—people evidently like the helicopter sound when it flies low over the towns.

Good Cargo Potential

The S-51 has a payload of about 750 lbs. and cruises at about 80 miles per hour. Paper work for the pilots has been materially reduced. For example the CAA requires a weather report jotted down at each stop, but this became absurd with helicopters when the stops were but four or ten minutes apart, so the CAA waived the regulation.

Belinn says his company is being paid at the rate of about three mills per letter carried, which is certainly a modest cost for the service. He thinks operating costs should remain at about $1.25 a mile, but he looks forward to the day when he can operate machines carrying five or six persons. He thinks there is plenty of passenger business at 20c a mile because of the enormous time saved in the Los Angeles area, and he says the cargo potential is so big that he doesn't dare touch it now. As it is, some of the schedules have to turn away mail.

Belinn thinks the service could be speeded even more by having a mail jockey on board to handle the sacks and paper work. Recently the CAB gave the company a much-needed pay boost.

It's a good operation. It's got some real business uses. The helicopter has a bright future for this type of local mail service and someday should be doing a good job carrying passengers.

Tank-Tread Landing Gear

Out at the new New York International Airport at Idlewild, a Fairchild C-82 "Packet" banked gracefully into the base leg of its approach and dropped its landing gear. As it neared the group of watchers on the parking apron, a startled field attendant who had not been briefed on the mission of this unique C-82, pointed to the plane and exclaimed in surprise, "Look at that landing gear!" For, where there should have been two large main wheels and a smaller nose wheel, there were two large tank-treads and a smaller nose tread. The plane touched the runway lightly on its novel gear, rolled a few hundred feet and came to a complete stop.

The plane was the Air Force's special proving plane, assigned to flight-test this new landing gear, making its first public demonstration. The C-82 is not the first plane to test the track-gear; previous tests had been made by engineers of the Air Materiel Command on a Fairchild PT-26, a Curtiss P-40 and a Douglas A-26. However, at a gross weight of 54,000 pounds, the C-82 is the largest plane to test the gear, and it is also the first to have a tricycle installation.

Designed to operate in and out of short, unimproved airstrips during military operations, the C-82 gear consists of two 19-inch-wide ribbed rubber tracks, reinforced by a matrix of steel cables, which revolve on a set of six rollers, and a 14-inch wide steerable nose track. All three are completely retractable in the same manner as conventional gear. Actual weight of the track-gear exceeds that of the normal wheeled-gear of the C-82 by more than 1000 pounds.

The track-gear performs the same function as the belt-tread on a tank, thus spreading the weight of the aircraft over a larger area and increasing braking action. Military planes handicapped by limited landing facilities under combat conditions could be equipped with the tank-tread gear, permitting them to land on quickly-built wire mesh runways, since the track-tread reduces ground landing pressure to one-third of normal. General George C. Kenney, commanding general of the Strategic Air Command of the Air Force, has stated that the track-tread gear, had it been in service during the war, would have saved six months in the island-hopping air offensive against Japan.

There is also a commercial possibility in the new gear. One of its chief advantages is the fact that the heaviest airplanes in existence could use short, lightly-stressed runways, since the plane's weight is spread over approximately 250 per cent greater runway surface. Thus, air cargo service could be provided for small communities which might not be able to finance the large runways required for the operation of conventionally-geared aircraft.

The Air Force's C-82, at gross of 54,000 pounds, is largest plane to test the tank-tread landing gear; it is first to have a tricycle installation.

Super-Aircraft Carrier

Not to be outdone by a 70-group Air Force, the Navy has submitted its bid for a share of the strategic bombing responsibility, in form of a proposal for a 65,000-ton super aircraft carrier, capable of launching planes the size of the Boeing B-29 Superfortress. The proposal has received the sanction of the Combined Chiefs of Staff and the House Armed Services sub-committee.

The carrier, with a flight deck length of 1030 feet, would be the world's longest ship, 70 feet longer than the Queen Mary. The flight deck would be 190 feet wide, with hinged catapults on either side to bring the over-all width to 236 feet. With an estimated cost of $125,000,000, the prototype carrier would require about four years to build, although this could be stepped up to 30 or 32 months should an emergency require it. Its speed would match that of the fastest of the Navy's current fleet, the 45,000-ton Midway class.

Flight Test Base Sought

One would hardly think that Muroc Air Force Base, on the edge of the Mojave Desert in California, with its seven-mile runway and thousands of acres of obstruction-free test space, could ever become overcrowded. But that very thing has happened to the world's largest flight test base.

There are currently so many priority experimental projects under way at Muroc that company test pilots flying production models have trouble clearing for their test flights. If, for instance, a plane such as the Air Force's supersonic research XS-1 is in the air, no other planes are allowed to take off. By the time it concludes its test flight another priority project is ready for testing and the production models must wait. As one pilot said, "It's getting so you practically have to make a reservation in order to take-off on a test flight."

In an effort to do something about the congestion, a delegation of test pilots representing Southern California aircraft manufacturers visited Palmdale Airport, about 40 miles from Los Angeles, on the other side of the mountains. Palmdale would make an ideal location for an auxiliary flight test base. It has 7000-foot concrete runways, which could easily be extended to 10,000 feet, and is surrounded by open country, making all approaches free of obstructions. Since it is on the other side of the mountains, it is outside of the pattern of the heavy air traffic into the Los Angeles area.

However, the aircraft manufacturers are not, at present, financially prepared, even on a joint basis, to take on the monetary burden that construction of facilities would require. Hangars would have to be built, mechanical facilities installed, power supplies arranged and facilities for personnel established, for Palmdale has nothing of this nature.

The test pilots feel that the Air Force might be persuaded to foot the bill for such a test installation. They would use it only for routine initial flights of production type aircraft, whose prototypes had already received thorough flight testing. The experimental models would still be tested at Muroc.

New Aircraft

The Air Force announced that its **McDonnell XF-85** parasite fighter had been rolled out of its construction hangar and is approaching first flight date. The XF-85 is a small, barrel-like plane, only 21 feet across the wing and 15 feet long. Designed to be carried in the front bomb-bay of a B-36 bomber, the parasite fighter has wings that fold upward like those of Navy carrier planes. The XF-85 is powered by a single Westinghouse J-34 (24C) jet engine with a rated thrust of 3000 pounds, giving it a speed in the 600 mile-per-hour class. It is lowered from the bomb-bay of the "mother" plane by a special hydraulic hoist. For "landing," the parasite has a built-in, retractable hook, which is flown into an "eye" in the hoisting apparatus.

—*By* JAMES T. HAGGERTY, JR.

PERSONNEL

ADMINISTRATIVE

Robert Lyn Griffith, assistant secretary of American Airlines for the past two years and before that associated for four years with legal firms representing American and PAA before the CAB, will become assistant to the president of Delta Air Lines on June 1.

C. E. "Gene" Perkins, director of route development for Trans World Airline for the past two years, has resigned to accept the position of city manager of Winston-Salem, N. C., on July 1.

John H. Blaffer, Houston oil man, has been elected to the board of directors of Mid-Continent Airlines.

Patrick H. O'Donnell, Jr., has been named city manager for Pioneer Air Lines at El Paso.

Joe W. Fowler has been named city manager for Pioneer Air Lines at its new station at Roswell, N. M.

Raymond C. McGuire, who joined National Airlines in February, 1945, has been appointed NAL eastern regional cargo superintendent. Before the war he was employed by the John C. Rogers Export Co., freight forwarders, and by the Pennsylvania Railroad.

OPERATIONS-MAINTENANCE

Edward T. Bolton, formerly executive assistant to John A. Collings, vice president-operations, has been promoted to manager of TWA's operations in Europe.

William S. Wallace, formerly United Air Lines superintendent of regional ticket offices, has been promoted to station manager at Detroit, replacing **Seth Parker,** who was appointed station manager at Philadelphia.

George P. Coker, Jr., former supervisor of operations for American Airlines at Dallas' Love Field, has resigned to become director of aviation for the City of Dallas.

Capt. A. B. Rawson, director of flight development for Trans-Canada Air Lines, has been awarded the McKee Trophy, awarded annually to the person deemed to have made the greatest contribution to the progress of aviation in Canada.

D. G. Hendrickson has been appointed operations manager for Wisconsin Central Airlines, succeeding **A. I. Pett,** resigned. Hendrickson has been supt. of operations for Empire Airlines for the past two years.

Rita M. Bundy has been named chief stewardess of National Airlines, succeeding **Margaret Watson,** who has resigned to return to teaching.

Mary Alice Nelson has been named chief hostess for Pioneer Air Lines, replacing **Jennette Hudson,** who is getting married.

Robert L. Griffith
Assistant to Delta President

TRAFFIC & SALES

Edward G. Bern has resigned as vice president-traffic, for Peruvian International Airways.

Richard W. Baker, district sales manager for American Airlines at Philadelphia the past three years, has been transferred to San Francisco in the same capacity. **Wilfrid A. Carr** replaces him at Philadelphia.

Eugene Ostheimer has resigned as assistant general sales manager of Northeast Airlines and has plans for entering a business associated with the air transport industry.

Eric L. C. Versteegh has been appointed regional traffic representative for KLM Royal Dutch Airlines in Los Angeles.

Edward T. Bolton
Manages TWA European Operations

He served formerly as assistant traffic manager of KNILM's Pacific Division.

Alfred Nelson, has been appointed district sales manager for Pan American in Shanghai. Before joining PAA, he was d.s.m. for United in Boise.

Jacques de Sibour, formerly regional traffic manager for American Overseas Airlines in Paris, has been promoted to European sales manager, replacing **William F. Muller,** who resigned to become president of Air Express International, Inc.

Edward K. Ellis, formerly connected with Railway Express Agency, Eastern Air Lines and PAA, has been appointed district manager of traffic and sales for Mid-Continent Airlines in New Orleans.

William C. Kelley, formerly TWA city traffic manager at Cairo, has assumed the newly-created position of district manager for Arabia, with supervision over the new office at Dhahran.

John Sivertsen, formerly a traffic representative in New York, has been named district traffic and sales manager for United Air Lines at Baltimore.

James E. Schutt, formerly traffic representative for PAA in Guatemala, has been promoted to district traffic manager at San Salvador.

Leonard E. Juengling, who was supervisor of the manuals section of TWA prior to opening his own advertising agency in Kansas City, has been appointed supervisor of advertising for Mid-Continent Airlines, succeeding **Ed Salman,** resigned.

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Charles J. Roggi, formerly manager of transport aircraft sales for Fairchild Aircraft, has opened his own offices for general sales and engineering representation at 921—17th St., N.W., Washington.

Max Karant, formerly of *Flying,* has become assistant general manager and editorial director of the Aircraft Owners and Pilots Association.

E. O. McCartney, formerly chief driver examiner at San Francisco Naval Shipyard, has been appointed to head a new motor vehicle safety program for United Air Lines, with headquarters at Denver.

Marc T. Worst, has been appointed v.p. and Burbank base mgr. for Lockheed Aircraft Service, Inc., succeeding **Col. Luke Harris,** resigned. **B. A. Forrest** has been elected secretary-treasurer.

Roy J. Sandstrom and **John F. Strickler** have been appointed executive chief engineer and assistant executive chief engineer, respectively, of Bell Aircraft Corp.

Hobart P. Davis, formerly in charge of communications maintenance for CAA at Bidwell Field, Red Bluff, Calif., has been appointed Radio Engineer P4 grade under the War Dept. Overseas Affairs Branch and is stationed in Japan.

Kindelberger NA Chairman

J. H. "Dutch" Kindelberger, president of North American Aviation since the company began aircraft manufacturing operations in 1934, has been elected chairman of the board and chief executive officer, and J. L. Atwood, formerly first vice president, has been named president. Kindelberger succeeds Henry M. Hogan, Detroit, whose resignation was accepted by the directors.

Decision of General Motors Corp. to dispose of its holdings in North American (1,000,061 shares, 29.1% of outstanding capital stock) will have no bearing on conduct of future operations, it was stated. GM's decision to sell is based on company policy calling for elimination of investments in which GM does not have a direct business connection.

Woodhead in New Position

Harry Woodhead has resigned as president of Consolidated Vultee Aircraft Corp. and has been elected to newly created post of vice chairman of the board. Floyd B. Odlum, chairman, will serve as president until La Motte T. Cohu takes the position in the near future. Cohu's resignation as president of TWA was effective June 1.

V. C. Schorlemmer has resigned as Convair v. p.-finance because of ill health, but remains with the company on part-time basis. He will be succeeded by L. W. Miller, former v. p. and treasurer of Northeast Airlines.

AWA Elects New Officers

The Aviation Writers Association, at its annual meeting in New York, elected the following officers: president, Arthur A. Riley, Boston Globe; 1st v. p., George Scheuer, South Bend Tribune; 2nd v. p., Dick Kirschbaum, The Newark News; 3rd v. p., Roger L. Williams, San Francisco News; executive secretary, Ralph McClarren, The Franklin Institute, Philadelphia; treasurer, L. V. Spencer, New York, N. Y. (re-elected), and chairman of the board of directors, Kendall R. Hoyt, Letter of Airmen, Washington, D. C.

Pasquel Buys DC-6, Convair

An unannounced sale of a Douglas DC-6 to Jorge Pasquel, best known in this country as head of the Mexican baseball league, became known recently when the plane appeared on the flight line at Santa Monica adorned in the Mexican national colors. The Douglas company parried all questions on the craft, admitting only that it is for Mexican delivery, but other sources indicated that it was a personal purchase by Pasquel.

Pasquel also has purchased a Convair-Liner which Consolidated Vultee has turned over to Grand Central Airport Co. at Glendale, Calif., for installation of an executive-type interior.

Airline Commentary

By ERIC BRAMLEY

WE DON'T KNOW whether this comes under passenger service or what, but Eastern Air Lines was on the ball . . . Here's a report from EAL at Raleigh-Durham: "EAL Flight 634 arrived at Raleigh-Durham at 11:28 a.m. and blew a tire on the main landing gear when taxiing out for take-off. It returned to the ramp and arrangements were made to bring a wheel up from Miami on a cargo flight. After these arrangements had been made it was estimated that there would be a lengthy delay with departure somewhere between 5:30 and 6:30 p.m. There were 46 passengers on the flight and it was obvious that the estimated delay would be very tiresome to the passengers with the limited lobby facilities available here. In order to pacify these passengers and keep them in a good humor, Field Traffic Supervisor John Smith conceived the idea of arranging a sight-seeing tour for them. A bus was chartered from Carolina Trailways in Raleigh and 31 of the passengers elected to take the trip . . . Dinner was arranged in a private dining room . . . and they were returned to the field, leaving approximately 15 minutes after the bus returned. The results were more than we had hoped for. To a person they thanked us and said that despite the inconvenience the delay had caused them they had thoroughly enjoyed the afternoon" . . . No further comment is needed . . .

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This here airline business is really progressing . . . There are operations to so many places that even the privacy of elephants is being invaded . . . The International Air Transport Association has put out the word to all its members . . . It has in effect said, "Please, fellows, when you're flying over East Africa, stay above 1,500 feet. You're scaring the elephants" . . . East African Airways told IATA that low-flying planes were frightening herds of elephants, as well as giraffe, buck, etc., into areas where it was difficult for either game wardens or tourists to get at them . . . Keeping them away from the tourists is probably a blessing—for the elephants . . .

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An old friend of ours writes concerning the parking problem at airports . . . "There has been much comment concerning the lack of parking facilities at terminals, but from observation I am not so sure but that part of the difficulty is caused by airline employes themselves," he states. "I have noted on numerous occasions that the choice parking spots adjacent to the passenger terminal facilities are occupied by airline personnel working at the terminal itself, and by crews, etc. This is not restricted to any one airline but is generally true with all airline personnel. It seems to me that it might be desirable to have the airport officials restrict parking of airline employes to certain sections, not necessarily the most convenient, so that our patrons who are actually paying the freight could have the most desirable and best parking spots closest to the check-in and ticketing facilities" . . . We know that there are restrictions in some places, but it seems like just good common sense to expand the practice . . .

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In the April 1 issue we ran a piece about the Naval Air Transport Service pilot who landed a PB4Y on an icy runway in Alaska, couldn't stop, swung the plane completely around, and, when it kept sliding backwards, stopped it by applying power . . . Now comes a note from a Navy lieutenant commander in Alameda as follows: "A commander with much Alaskan experience insists the PB4Y was an R5D (DC-4), and that the tail hung way over a high cliff rising from a river bed when the plane changed its direction of motion. Oh boy!" . . . We don't know whether this is the commander's way of telling us that he was the pilot of the plane, or whether he's just adding to our information . . . Anyway, if true, it makes the story all the better . . .

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It was 11 years ago on June 1 that the first issue of AMERICAN AVIATION appeared . . . The work on it was done in huge offices at 647 Earle Bldg., Washington . . . The offices were so huge, in fact, that after putting a desk and a typewriter in the room, you could still get out—if you walked sideways . . . A lot of copy has gone into print since then, and things look a bit different on the 11th anniversary . . . AMERICAN AVIATION has just moved into new offices which take up a whole floor . . . Come pay us a visit at 1025 Vermont Ave. in Washington . . .

COMPANY-OWNED PLANE

Tom G. Dillingham
INSURANCE and BOND SERVICE
BASS BLDG. PHONE 4111
ENID, OKLAHOMA

MARCH 1, 1948

MR. WALTER H. BEECH
BEECH AIRCRAFT CORPORATION
WICHITA, KANSAS

DEAR SIR:

I THOUGHT YOU MIGHT BE INTERESTED IN THE WAY I AM PUTTING MY NEW BONANZA TO BUSINESSLIKE USE.

I HAVE ALREADY MADE SEVERAL LONG CROSS-COUNTRY TRIPS IN IT AND HAVE FLOWN IT OFF HIGH ALTITUDE FIELDS IN PRACTICALLY ALL WEATHER CONDITIONS. I AM MORE THAN PLEASED WITH ITS PERFORMANCE AND FLIGHT CHARACTERISTICS.

FOR SEVERAL YEARS I HAVE COVERED QUITE A TERRITORY IN THE SELLING OF INSURANCE AND ADJUSTMENT OF INSURANCE CLAIMS. I AM NOW COVERING ABOUT THREE TIMES THE TERRITORY I DID FORMERLY AND I AM NEVER AWAY FROM HOME OVERNIGHT. I USED TO BE GONE TEN DAYS OR TWO WEEKS AT A TIME. I FIND I CAN GET INTO ANY FIELD THAT ANY OTHER AIRPLANE CAN, AND IN SMALL TOWNS WHERE THEY HAVE NO FIELDS, I USE A SMALL PASTURE, ACCOMPLISH MY BUSINESS AND LEAVE WITHOUT ANY LOSS OF TIME.

I ALSO OPERATE RANCHES IN COLORADO AND NEW MEXICO AND USE THE PLANE TO COMMUTE BETWEEN THEM, MAKING THE TRIP EACH WAY IN ABOUT TWO HOURS WHEREAS IT TAKES TEN OR TWELVE HOURS OF HARD DRIVING IN AN AUTOMOBILE.

THE BONANZA IS CERTAINLY MY IDEA OF EFFICIENT TRANSPORTATION, AND IT IS ONE OF THE BEST BUSINESS INVESTMENTS I HAVE MADE FOR A LONG WHILE. IT IS SO FAST AND ECONOMICAL THAT IT ACTUALLY PAYS ME A PROFIT ON ITS OPERATION.

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UAL's Simplified Centralization at Denver

By David Shawe

There are two schools of thought on how to operate a big airline. One contends that efficiency is gained by breaking the system down into operating regions, with similarly-titled department heads and staffs in each region. The other seeks to centralize the whole show, with a minimum of responsibility outside the home office.

TWA, and even Capital Airlines, had regional operating plans and abandoned them (in conjunction with other wholesale economies). American Airlines has long operated with a scattered sort of centralization, but is reported to have toyed lately with the idea of setting up a number of regions, or little airlines within a big airline system.

On the surface of it, there are two shortcomings to the regional idea. The first is a problem of personnel—getting the right caliber, and holding it down to efficient and economical size. The second has to do with the speed with which a plane can move from one region into another, creating all sorts of jurisdictional questions.

United Air Lines operated for years with a compact and generally efficient two-region operating system. A regionalization purist would have found the arrangement inadequate in many respects, with one region sitting in Chicago facing east, and the other sitting across the hall facing west. Nevertheless, United was a confirmed regional operation, with appropriate vice presidents, etc. If there were shortcomings to the idea, they were not particularly apparent outside the company.

Evidently there were shortcomings—most of them under the heading of delay in getting things done. Early this year United switched its operating philosophy and became a centralized airline—not at the company's Chicago headquarters but at a new operating center in Denver. About 300 key operations and passenger service people were moved into Denver from Chicago and other points on the system.

Now, with a few months of experience, United feels that its simplified centralization is the answer.

The key to any central control of aircraft movement and space allocation seems to lie in good communications coupled with a simplified operating scheme which does not burden the operating center with a multitude of petty problems.

In consolidating its regional staffs, United actually put more rather than less responsibility on its terminals and route stations. The Denver center deals only in essentials—problems, solutions and results. It keeps in touch with everything from New York to Honolulu and from Vancouver to San Diego, but it somehow avoids getting bogged down in petty detail.

Operations Control—Every factor affecting United's system operations is displayed graphically in this operations control room. Colored lights on the system map, controlled by panel in foreground, depict actual weather conditions at all stations. More detailed weather data, covering a three day period, appear on charts to left of main board. Equipment status is charted at far left, and performance information for the previous day is filled in on board at right. Cumulative data on performance and costs are graphed on other wall surfaces. UAL vice president Jack Herlihy is on platform discussing an operating problem.

Responsibility at Denver is divided under J. A. Herlihy, vice president-operations, and D. F. Magarrell, vice president-passenger service. Herlihy's operations control center undertakes to keep the airplanes moving where and when scheduled. Magarrell's payload control center keeps the seat and cargo space properly allocated and recorded.

Speed Reservations—Simplified charts on clipboards carry all data United finds necessary for fast and accurate control of space on all flights. By charting only block sales rather than individual names, UAL eliminates a tremendous amount of communications and detail work.

The new operations control room (see cut) gives officials a continuous picture of factors affecting operations all over the system. Key men gather in this room each morning for a briefing on weather, equipment status and special problems. Major delays or troubles during the previous day can be reviewed, trends analyzed, and corrective action decided. Telephone circuits provide direct communication between the control room and every major point on the system. Information around the walls of the room is kept current at all times so that anyone can step into the room and bring himself up to date in a few minutes.

Next door to the operations control room, and closely coordinated with it is the payload control center—which is a new name for a new variation of the central reservations control idea. As United explains it, payload control serves as a wholesaler of space, delivering passenger and cargo accommodations on a where-and-when-needed basis. It does not deal with the customer, but with the "retail" sales office.

United's payload control department differs from the usual central reservations control office. It sells and records only blocks of space, not individual seats. Where some systems require one-way or two-way communications for each seat on each flight, United's method keeps the communicating and the recording down to a minimum at the central office. It gives the customer immediate confirmation (except on sold-

out flights) when he asks for a reservation, and it gives the airline sufficient control to avoid overselling, but it doesn't require a vast army of people to keep things straight. In fact, the system control room gives the impression of being more compact and less hurried than the local Denver reservations office in an adjacent room.

Small stations particularly like the new reservations system. It permits them to sell on the same basis as the bigger stations, immediately. Sales are logged at the flight's point of origin, and reported to Denver only when blocks of seats have been sold. Simplified forms have been worked out for recording each flight, and for graphically "following" each load from point of origin to destination. A similar system for cargo load control is being placed in peration now that the passenger problem has been licked.

Biggest advantage of the two control rooms and their subsidiary functions is that they give key people an accurate, minute-to-minute picture of every activity which is important to efficient management. Problems and weaknesses become apparent immediately—not after prolonged statistical study. Load factors, equipment status, operating costs, maintenance schedules, etc., are charted daily. Field problems and inquiries can be handled instantaneously.

J. A. Herlihy summed up the value of the new Denver set-up by saying recently: ". . . we have already corrected several situations which we probably would be just now hearing about at the old Chicago headquarters."

Payload Control—In this room in Denver United Air Lines keeps track of all cargo and passenger space on all of its flights. Teletype communications pass through window at end of room. Senior controller at raised desk in foreground spends much of his time on telephone discussing extra sections and other urgent problems with stations managers and the operations control room.

MODIFICATION

Improved 2-0-2 Fueling

If Northwest Airlines was pleased with the performance, flight characteristics and economies of the fleet of 10 Martin 2-0-2 transports it put into operation last fall, it should be exceptionally happy with the new and modified 2-0-2's now being fed into its fleet at the rate of one every few days.

Upon completion of deliveries, probably between July 1 and July 15, Northwest will have 15 entirely new 2-0-2's plus modifications of its original fleet of 10, all incorporating improvements based on the first few months' operating experience with the Martin planes.

Not the least of improvements in the 2-0-2's are certain changes made in the underwing fueling system. This system, pioneered by The Glenn L. Martin Co., was expected to expedite fueling at intermediate route stops and thus reduce ground delays, increase aircraft utilization and save ramp personnel man-hours. But the original underwing fueling just didn't work out as expected, this being one of the surprisingly few "bugs" discovered in the 2-0-2.

On paper, the system looked good, but in practice certain flaws were found. For one thing, the hose couplings on fuel trucks used by the airline did not fit the 2-0-2 tank openings, and all the couplings had to be modified. Another minor difficulty was the fact that the inset housing the fuel intake was too small, and the fueler frequently barked his knuckles in coupling and uncoupling the hose. A third and more serious shortcoming was the lack of a safe and sure means of telling when a tank was full.

Shut-Off Problem. There was an automatic shut-off on the fuel trucks, but this lacked being 100% reliable. A supplementary check to prevent overfilling was provided in underwing gauges, but it was found that even these could not be relied upon to tell when a tank was full. Northwest found this out the hard way—by rupturing a wing. This experience climaxed the company's difficulties with underwing fueling and led to recommendations for several improvements designed to make the system safer and more reliable. Also, as a safety precaution, every time a 2-0-2 was fueled an attendant had to climb on top of the wing and remove the auxiliary fuel cap, which tended to nullify the principal advantage of underwing fueling.

In the new and modified 2-0-2's it is believed that all of these failings have been remedied. In addition to the automatic float valve which is supposed to register a full condition on the underwing gauge, each wing of the 2-0-2 now has a built-in surge-protection or "pop-off" valve which provides an escape outlet for excess fuel in event of accidental overfilling.

An added precautionary device is a calibrated "drip stick" which is built into the wing tanks. When pulled down by the attendant this stick drips fuel from a small outlet in the end as soon as the reading on the gauge coincides with contents of the tank. If there are 650 gallons of gasoline in the tank, the drip stick will drip when pulled down to the 650 mark. This device can be pulled down and read in a matter of seconds through use of the "pogo stick" used by fueling attendants, and is a great improvement over the old "dip stick" method of dipping a calibrated stick into the fuel tank through the opening on top of the wing.

Both the "drip stick" and the new "pop-off valve" are products of the Martin engineering department, and both Martin and Northwest are confident that these new devices, plus the standard float valve, the automatic shut-off and the underwing gauges will make it all but impossible for a 2-0-2 wing tank ever again to be accidentally overfilled, or underfilled.

The underwing fueling system has been further improved through a re-designing of the Parker fuel intake valve. Malfunctioning of this valve in the original 2-0-2's sometimes resulted in a fueler being deluged with gasoline as he was preparing to couple the hose. On one occasion nearly 100 gallons of fuel was lost before the accidental flow could be stopped. The faulty valve was gone over thoroughly, and it is believed that all "bugs" have been eliminated from the Parker valve now in the 2-0-2's.

In addition, the underwing fuel intake is now housed in a larger space than formerly, giving the fueler a little more working space, and all the external components of the system—the tank opening, the "drip stick" and the "pop-

off valve"— have been made quickly accessible, so that they are easily reached and used either through fingertip manipulation or a deft turn of the "pogo stick."

Full Benefits. As a result of all these improvements, Northwest now feels it is in a position to begin reaping the full benefits of underwing fueling. The system, when operated normally and without repeated interruptions to guard against overfilling, is capable of putting 1,000 gallons of fuel into the 2-0-2 wing in about five minutes, against a fueling time of nearly 20 minutes for putting in the same gallonage through the usual method. Furthermore, the underwing system eliminates the hazards to personnel in having to climb on top of a wing in all kinds of weather, and also cuts out the actual and potential damage to wing edges caused by resting ladders against them.

All in all, underwing fueling offers a number of advantages— in speed, safety and economy when the system functions properly, and Northwest Airlines believes the improved Parker valve and the Martin modifications and improvements have assured such functioning of the 2-0-2 underwing fueling system.

Other added features of the new and modified 2-0-2's include: use of water injection for increased take-off power; an increase in cargo space of from 140 to 278 cu. ft.; elimination of the front row of four seats, making room for a larger galley and a coat room forward of the passenger cabin; and provision of space in the rear position for carry-on and carry-off baggage, thus speeding loading and unloading of passengers at intermediate points.

Underwing Fueling Benefits— Initial "bugs" in the new underwing fueling system of the Martin 2-0-2 transport have been eliminated, and Northwest Airlines is now in position to reap full benefits of the system— in speed, safety, and economy.

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Air Navigation Board

Three months ago the Radio Technical Committee for Aeronautics had accepted the report of its Special Committee 31 on the formulation of a national policy on traffic control methods and equipment. Last week an important step was taken toward implementation of the research and development aspects of this program.

Set up by the Secretaries of Defense and Commerce was an Air Navigation Development Board "charged with developing a single basic system of air navigation and traffic control that will meet the needs of civil and military users." On the board, which will be under the Commerce Dept. for housekeeping purposes, will be representatives of Air Force, Navy and Civil Aeronautics Administration.

The new group, the secretaries said, is the result of a six-months study made by an ad hoc committee of the Research and Development Board. Recommendations of the committee, headed by Ralph Damon, president of American Airlines, provided for coordination of the military program for air defense with the over-all air navigation program.

The board, which will use the SC-31 report as its guide, is charged with responsibility "for the research, development and standardization of the national air navigation system," the Defense-Commerce announcement said. Such a group constitutes a planning and steering group to be headed by a man of national stature who, the committee recommends, should not represent any government agency concerned with civil or military aviation.

The committee further recommended that there be placed under the planning and steering group a highly qualified engineering staff charged with translating the broad requirements set by the board into technical specifications for the development of projects which would be executed on a contractual basis by universities and commercial laboratories and through special arrangements with other government facilities.

The Research and Development Board in turn has established a continuing Committee on Navigation with representation from the military establishment, Commerce Dept., Coast Guard, "and appropriate civilian membership," to have "special cognizance" over the common air navigation system project as well as over the tactical navigation programs of the armed services.

Braniff's $200,000 Network

Braniff Airways might have used existing air navigational facilities on its new Latin American route, but it couldn't reach an agreement with Pan American Airways and its affiliate, Pan American-Grace Airways, operators of

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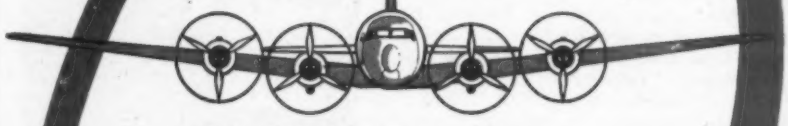

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Actual service tests show drastic savings

Aircraft: Douglas DC-3's, DC-4's
Problem: Determine costs of aluminum surface maintenance; removing oxide, film, stains, grease and oil.
Condition: Aluminum surfaces in very poor condition; heavily oxidized, corroded and dirty.
Materials: Cee-Bee Alumaloy A for removal of oil, grease, sludge, exhaust stains. Cee-Bee A-3 for cleaning and brightening aluminum.

Cee-Bee CASE STORY No. 59

Facts and figures substantiate all statements.

This was an actual service test, conducted under operator's supervision. The aircraft, selected by the operator, were particularly dirty, almost black with oxidation, badly corroded on under surfaces.

Cee-Bee A-3 and Alumaloy A were used by operator's own personnel, all inexperienced help. Resulting cleaning time was naturally higher than usual. Actual time and cost records were kept. These figures were projected to yearly averages in accordance with Cee-Bee Engineered Procedures now in use by many other scheduled operators. Hourly wage rate was estimated at $1.10 average throughout. Actually, wage rates are considerably higher. Hand polishing figures are operator's actual fleet maintenance costs.

RESULTS: Aircraft appearance was highly satisfactory to operator. Cleaning compounds met operator's safety standards.

DC-3's—yearly cleaning and brightening cost, each airplane
Hand Polishing Method...$1852.00
Cee-Bee Procedures
Wet (outdoor) method.. 569.00*
Dry (hangar) method... 887.80
*69% SAVING

DC-4's—yearly cleaning and brightening cost, each airplane
Hand Polishing Method...$4892.00
Cee-Bee Procedures
Wet (Outdoor) method.. 1055.00*
Dry (hangar) method... 1847.00
*78% SAVING

Complete details on this test are available on request

FAYING SURFACES ARE SAFE

Laboratory tests, field tests and actual operation prove the all round safety of Cee-Bee materials. One international airline using Cee-Bee A-3 regularly has specimens taken from airplanes cleaned over a year ago. Taken apart after continuous service over salt water, operator reports faying surfaces showed ABSOLUTELY NO ATTACK; proof that Cee-Bee A-3 is safe. This operator commends Cee-Bee A-3 for its complete absence of harmful effects.

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the established facilities, so it set out last fall to provide a network of its own. First details of the project have now been disclosed.

At a cost of $200,000, Braniff within the past six months has acquired land, constructed buildings and erected telephone lines and radio towers on the first segment of its Latin American route (Balboa, C. Z., Guayaquil, Ecuador, and Lima, Peru).

Already in operation in Panama is an aerophare equipped with a 2,000-watt omni-directional transmitter capable of "beaming in " planes from any direction within a 500-mile radius. This equipment was furnished by Braniff to the U. S. Army for installations at France Field on the north end of the Panama Canal. It will be operated by the Army and will be available for use without cost to all other commercial airlines and civil and military aircraft.

An entire passenger and freight terminal building is being constructed by Braniff in Guayaquil, and two radio stations with 2,500-watt aerophares are being built at Esmeraldas and Guayaquil.

Dual transmitter installation permits the stand-by unit to come on automatically at the same strength in event of failure of the main transmitter. Also nearing completion are Diesel electric power plants in duplicate, communications equipment, and dual navigational transmitters.

The system, which is expected to be completed in time for the proposed inauguration of service over the route in June, will provide three major types of radio navigation—ground-to-air communication, ground point to ground point communication, and guidance of planes by radio.

MAINTENANCE

New Shops for WAL

Western Air Lines, noting that its 1947 maintenance costs were consistently above those of other comparable carriers, decided something had to be done. Result: installation of new overhaul and maintenance shops.

The new shops, which will be utilized for overhaul and maintenance work on engines, propellers, carburetors and magnetos, will occupy 27,000 sq. ft. of floor space in Western's large new hangar at Los Angeles Municipal Airport. Work on the shops will begin in July, and they are expected to be in complete operation by October.

Equipped to handle about 20 engine overhauls a month, the shops will have facilities for overhaul and maintenance of three types of Pratt & Whitney engines—the 1830, used in the DC-3; the R-2000, used in the DC-4, and the R-2800, used in the Convair Liner. The shops will also be equipped to handle three types of magnetos and two kinds of Hamilton Standard propellers.

A major saving to be effected by the new setup will be the charges which outside vendors tack on to direct labor costs to cover such expense items as depreciation, insurance and interest on buildings, heat, lights, upkeep of building, and administrative overhead. Western already bears these expenses with regard to its Los Angeles hangar building, where the engine shops will be housed, so it can realize a reduction of about 25% in direct labor costs per engine. Furthermore, with its own shops, the airline will be able to claim full discounts on engine, propeller and magneto parts, discounts which it does not now receive. Western estimates it will save $25,000 a year on this item alone.

Other advantages will include the consolidation of stockrooms and stockroom personnel, since the company must now maintain stockrooms in both its own plant and in the plants where its overhaul and maintenance work is done. Also to be eliminated will be the necessity for trucking engines and accessories from WAL's headquarters to the vendors.

The new shops are expected to cost about $100,000 when fully equipped, but Western expects to recapture this investment with its first year's savings. Also, for the first time in the company's 23-year history, it will have all of its general office functions and maintenance operations housed under one roof.

Engine Lift—Pacific Airmotive Corp. mechanics can work at hand and eye level anywhere on the big Pratt & Whitney R-4360 Wasp Major engine with the aid of new hydraulic lift installed at PAC's Burbank, Calif., overhaul base. Company's Linden, N. J., base also has been equipped to overhaul the Majors, which power the Boeing Stratocruiser and other aircraft.

PAA Drops 500: Pan American Airways' shift of maintenance and overhaul for its Atlantic Division from La Guardia to Miami resulted in dropping of about 500 employes of the Division

3

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last month. Most of these, the company said, were "probationers" never listed as permanent employes. About half of those affected were at La Guardia, the others overseas.

Reading Service Expands: Reading Aviation Service, 10-year-old maintenance and repair organization, has recently acquired the large maintenance hangar formerly used by TWA's International Division at Reading (Pa.) Municipal Airport. Facilities will be increased for maintenance and repair work on large type aircraft for airlines, military and executive owners. Other facilities include four warehouses, three additional hangars large enough for DC-3's and a large machine shop.

AiResearch Contract: AiResearch Manufacturing Co. has received a contract to replace all cabin pressure controls in the L-49 Constellations operated by British Overseas Airways Corp. with the latest AiResearch equipment. The new equipment which will go in the BOAC planes is the same as that now in service on the postwar L-649 and L-749 Constellations. It makes possible automatic cabin pressurization from the ground up.

—FLIGHT REGULARITY—

TWA Plans On-Time Payoff

In airline operations, time saved is money saved. One carrier, TWA, now proposes to kick back to its employes some of the money saved through their efforts toward "on time all the time" operations.

Now underway until July 15 is an on-time contest which will provide for substantial cash awards to the TWA stations exhibiting the greatest percentage of improved performance over a given period.

What prompted the contest was a four-month (December through March) performance study which showed that during March the total number of hours all TWA flights system-wide were late at final destination, converted into the equivalent of available plane days, represented a saving of approximately 125 plane days as compared to the December performance. This had the effect of adding four aircraft to TWA's fleet. Translated into dollars and cents and using the March load factor and plane utilization, this improved on-time performance was the equivalent of an increase in excess of $225,000 per month in TWA's potential revenues.

Figures released by Clifford Mutchler, TWA director of passenger service, domestic, showed 2,000 fewer departure delays on domestic flights in March than in December, a reduction of 25%. More significant was a reduction in the average length of ground delays from 16 minutes in December to eight minutes in March. These reductions resulted in a composite saving of 2,177 hours. Constellation departures in domestic operations also improved substantially, there having been 29% fewer delays on Constellation flights in March than in December. Included in Mutchler's figures were all delays, regardless of length and whether classified as avoidable or unavoidable.

Kemper Jacks, director of operations, international, reported that despite unusual operating problems, a reduction of 49% in the total number of hours late at final destination for all of TWA's overseas flights was achieved during February, as compared to December, and during March the total number of hours of delayed departures was reduced 30% from February.

The contest covers the three-month period from April 15 through July 14. All domestic stations scheduled to receive flights during the contest period will be included in the competition and will be grouped in accordance with their size and volume of traffic boarded. Goal of the contest is to dispatch flights within their scheduled ground time and originate flights at scheduled departure time. In addition, various factors contributing to delays, such as number of flights handled, amount of cargo and baggage loaded per flight, and the amount of weather and ATC delays, will be recognized by adding points so that stations are equalized for the purposes of the contest. Adjustments reflecting increased loads will be made to the point system each month.

Stations are divided into Group A, Group B and Group C, with the first prizes being $400, $300 and $200, respectively; second prizes are $200, $150 and $100, respectively, and third prizes are $100, $75 and $50. Prize money can be used for a station party or divided among station personnel, depending on the desires of the majority at each winning station.

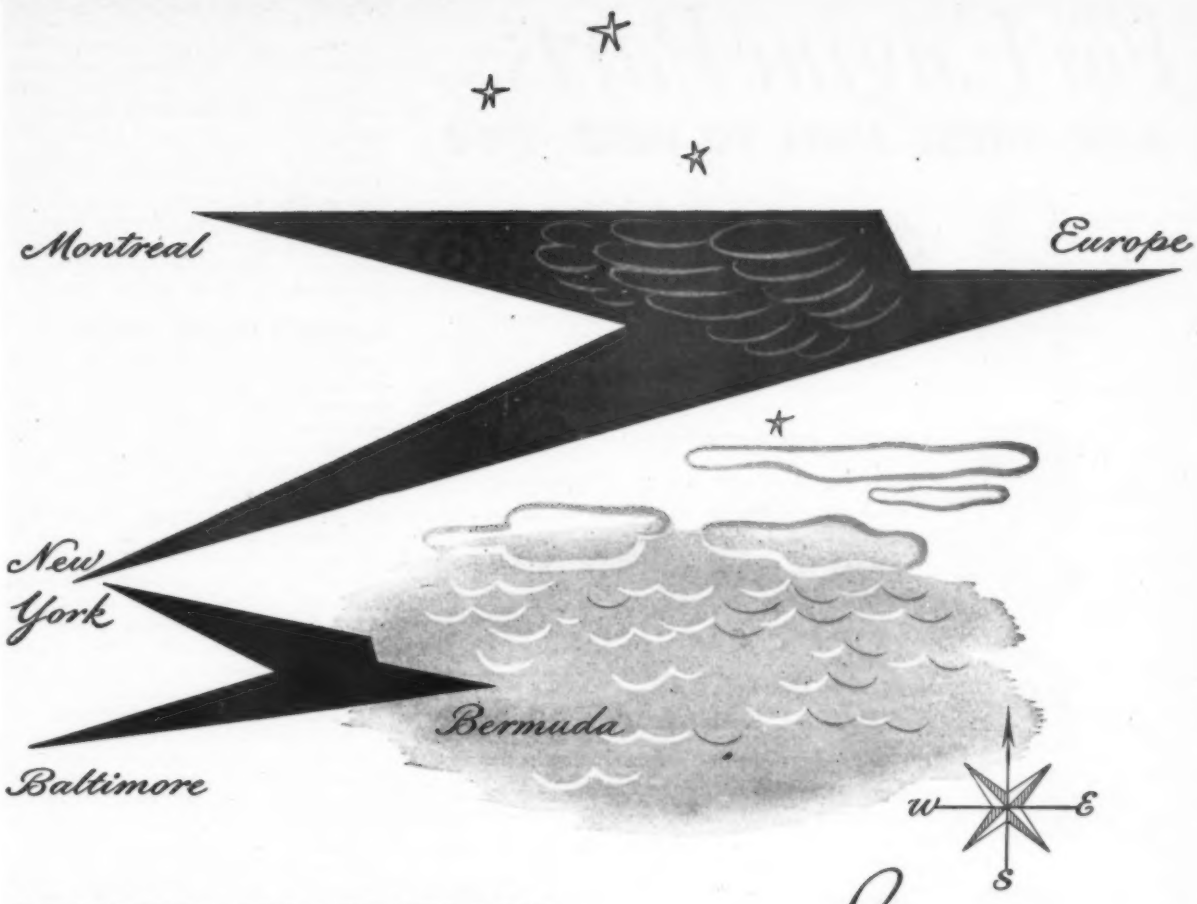
Chicago and Southern announced that during the first 20 days of April it experienced only 111 controllable flight delays out of 2,071 departures—a delay record of 5.4%. Detroit and Terre Haute chalked up a perfect record of no controllable flight delays during the period, while the Fort Wayne, New Orleans and Toleda stations had but two delays each. St. Louis ran up a score of dispatching 149 flights before experiencing a delay.

C & S's on-time campaign did not start until April 1, when all station managers received a personal letter from J. W. Meyer, superintendent of ground operations, explaining the project and requesting their co-operation.

Since then, five-minute ground stops have been inaugurated at Beaumont, Tex., El Dorado, Ark., Greenwood, Miss., and Paducah, Ky., where the left engine is not stopped and battery carts, pins and surface clamps are not used.

Control Chart—This Controllable Station Delay chart in Chicago and Southern's regional supervisor's office, Memphis, indicates the number of delays by station and by flight. Detroit and Terre Haute stations had no delays for first 20 days of April. Nita Anders keeps the chart up to date.

On-Time Prompter—Airline passengers at Memphis are prompted to board planes without delay by a special sign on the ticket counter. Similar signs, posted around the terminal, were made by the Memphis Airline Association, organized by American, Braniff, Chicago and Southern, and Eastern.



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This famous British "Bird of Passage" (*genus* Speedbird Constellation) is observed with increased frequency over the North Atlantic during the Spring and Summer months. Speeding high "above the weather"—with its distinctive BOAC body marking and characteristic ease and strength of flight—it has become a byword with travellers for swift, smooth journeys on these four vacation routes. For full information on the Speedbird's migratory habits, inquire at British Overseas Airways Corporation offices in New York, Baltimore, Washington, D. C., Chicago, Los Angeles, Montreal and Toronto; or see your Local Travel Agent.

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AE-101

Authorized Agents for War Assets Administration

AIRCRAFT ENGINE AND PARTS CORPORATION

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A delay display board in the regional supervisor's office in Memphis is posted daily by means of numbered thumb tacks to indicate delays by flights and stations. Red danger tacks are used when delays exceed five for any one station. "Keep C & S On Schedule" posters have been printed and dot the interior of station offices, fuel and air conditioning trucks, and the general offices. Special stationery for inter-office correspondence also plugs the "On-Schedule" theme.

Capital's 'Super' Flight

While other airlines have been working hard at the problem of schedule regularity, Capital Airlines has been quietly setting up what it hopes will become a model "on time every time" schedule. This so-called "super" flight is the early evening Washington-Chicago and Chicago-Washington nonstop—the Constitution.

Since selection of the Constitution six months ago as a bellwether for a systemwide on-time effort, considerable progress has been made in getting this flight off on time. True, the company has not yet lived up 100% to its goal of "Tonight—every night—at 5:45" from Washington; (6 p. m. from Chicago), but it is getting close.

During last September, the westbound Constitution operated with a total of nine delays. This had been reduced to two delays in the month of February. Delays in departure of the eastbound Constitution were cut from 12 in September to three in February. And February departure delays averaged less than two minutes each.

As part of the campaign, each day a complete report of the Constitution's performance is made, and any irregularities are thoroughly analyzed to determine the causes so that corrective action may be taken immediately. These reports and analyses are circulated to all company officials and department heads.

Capital reports that passenger load factor on the Constitution is better than systemwide.

NWA Reports: Northwest Airlines last fortnight reported on the first month's operation (Mar. 15 through Apr. 14) of its plan for refunding 5% of full fare to all passengers on planes reaching final destination more than 30 minutes behind schedule. Out of 5,859 scheduled arrivals, 91% were either on time, ahead of time or less than 30 minutes late. Northwest said this was approximately 50% better than the company's on-time record before the rebate plan was adopted. Approximately $6,600 in refunds was paid out to about 5% of the 46,194 passengers carried during the month.

Of 1,774 domestic flights scheduled in the 31 days, 87.4% were on time at all stops. In the first four days of the second month of the plan's operation, all but one of the 756 scheduled arrivals beat the 30-minute deadline.

COMMUNICATIONS

ICAO Standardization

The International Civil Aviation Organization had tried once to get the nations to agree on one dimensional system to be used by everyone in air-ground communication, but it had not been successful. Last month it tried again, this time giving the nations 10 years to narrow things down to one system.

ICAO nations during the past year had been unable to accept immediately an ICAO compromise table of units which attempted to resolve present difficulties caused by use of metric and foot-pound-second units in air-ground communication. The new plan, effective Jan. 1, 1949 (if the suggested timetable is adopted) provides five separate tables of units, with each state required to designate which table will be used by its ground stations. Each aircraft will carry conversion tables, but in case of emergency the ground station will transmit information in the units requested by the aircraft's crew.

By Jan. 1, 1959, the ICAO table will be standard. Two years after Jan. 1, 1949, the number of dimensional tables will be reduced to three (see table); after five years to two, with only the ICAO table remaining after 10. ICAO's 48 members will incorporate the plan into their legislation.

TWA's Direct Line

With direct communication between its New York and Paris offices becoming increasingly urgent and increasingly expensive as its international operations grow, Trans World Airline early this year saw the necessity for establishing its own trans-Atlantic radio-telegraph circuit. This circuit, first of its kind to be operated by an individual American flag airline, was opened in May.

The new cable link provides a means for quicker confirmation of space on TWA's overseas flights, which now total 34 a week to and from the U. S. and which will be increased this month. Also, messages for the airline's offices in London, Shannon, Geneva, Dublin and Rome are transmitted over the circuit and then relayed to those cities from Paris on TWA's European teletype network.

TWA personnel operate the transmitting and receiving station at LaGuardia, while Air France operators are on the Paris end. In addition to Air France, Aeronautical Radio and Press Wireless are cooperating with TWA in the operation of the radio-telegraph circuit, which is expected to greatly reduce transmission time and costs, as compared with those of commercial trans-Atlantic cables.

ICAO Dimensional Standardization

Each State shall select, and use one of the following tables of units in messages containing dimensional units transmitted by each aeronautical station under its jurisdiction in the International Telecommunications Service.

Dimensions	ICAO Table‡ of Units	Red*	Blue‡	Green†	Yellow*
Distances	Nautical Miles & Tenths	Kilometres	Nautical Miles & Tenths	Statute Miles	Statute Miles
Altitudes, elevations and dimensions on aerodromes and short distances	Metres	Metres	Feet	Feet	Feet
Horizontal speed	Knots	Kilometres per hour	Knots	Statute Miles per hour	Statute Miles per hour
Vertical speed	Metres per second	Metres per second	Feet per minute	Feet per minute	Feet per minute
Wind Direction and Wind Speed	Degrees & Knots	Degrees & Kilometres per hour	Degrees & Knots	Degrees & Statute Miles per hour	Degrees & Statute Miles per hour
Cloud Height	Metres	Metres	Feet	Feet	Feet
Visibility	Metres (or Kilometres)	Metres (or Kilometres)	Nautical Miles (or yards)	Statute Miles (or fractions)	Statute Miles (or fractions)
Altimeter setting	Millibars	Millibars	Millibars	Millibars	Inches of Mercury
Temperature	Centigrade	Centigrade	Centigrade	Centigrade	Centigrade
Weight	Kilograms	Kilograms	Lbs.	Lbs.	Lbs.
Time	24 hours, the day beginning at midnight Greenwich Mean Time	24 hours, the day beginning at midnight Greenwich Mean Time	24 hours, the day beginning at midnight Greenwich Mean Time	24 hours, the day beginning at midnight Greenwich Mean Time	24 hours, the day beginning at midnight Greenwich Mean Time

PROPOSED TIME SCHEDULE

* Tables Red and Yellow are not to be employed after Jan. 1, 1951.
† Table Green is not to be employed after Jan. 1, 1954.
‡ ICAO Table of Units and Table Blue may be used until Jan. 1, 1959. After that date, ICAO Table of Units is the only dimensional system to be used.

GROUND SERVICES

Consolidation Extended

With the start of TWA service into Sante Fe, N. M., April 24, it was announced that Continental Air Lines would provide consolidated ground service for both Continental and TWA at that point.

Similar consolidated ground services entered into between Continental, Braniff, Monarch, and Challenger have saved Continental an estimated $50,000 annually, Lynn Dennis, director of flight service, stated. Similar savings are accomplished by the other airlines involved according to the number of stations consolidated and the degree of consolidations.

At Denver, Continental handles Challenger's ground services and Braniff's maintenance activities; it handles ground facilities for both Monarch and Braniff at Colorado Springs and Pueblo; it provides Monarch with radio facilities at Albuquerque and handles Braniff ground facilities at Topeka.

Braniff handles Continental ground facilities at Wichita Falls and Lubbock, Tex.; Braniff handles Continental's maintenance at San Antonio; at Kansas City Continental maintenance is handled by the Kansas City Flying Service.

TECHNICAL REPORTS

Landing Impact: A technical report (No. 1212) on landing impact vibration problems in aircraft has been published by the National Bureau of Standards. The 6-page report is primarily an outline of known problems, theories and methods of analysis. An investigation project on the entire landing impact vibration problem is in progress at the bureau under direction of Dr. Walter Ramberg.

Pilot Reaction: Air Materiel Command studies demonstrating that a pilot can recover to straight and level flight faster under contact than instrument conditions have been published in a report (PB-81437, *Pilot Reaction Time*) available from the Office of Technical Services, Department of Commerce, Washington 25, D. C. Conclusions are that typical pilots under contact conditions can interpret the horizon about one-fifth of a second faster and can recover from a turn-bank attitude 1½ seconds faster than when on instruments.

SAFETY

Alpha Accident Report

Nine months after American Airlines' research plane Alpha crashed into Bower Bay near New York's LaGuardia Field, the Civil Aeronautics Board issued its official report on the mishap, which took the lives of three crew members. Its finding as to probable cause: "following an attempted landing, a miss-approach procedure was attempted for a second landing without sufficient air speed for single engine operation."

A significant feature of the CAB report was the official conclusion that Capt. Walter A. Davidson and his co-pilot "were not under the influence of intoxicating liquors" at the time of the accident, as had been suggested by the Queen County toxicologist.

Reviewing the accident, the report stated that the first landing attempt was made when, shortly after take-off for Buffalo, Alpha's crew discovered low oil pressure in one of the two engines of the C-47 plane. Due to limited visibility, the initial approach was missed. With one propeller feathered, a "go-around" was then attempted, but the turn was made at low speed, low altitude and at a high angle of attack. On lowering the landing gear for the second attempt, Alpha stalled out and dropped into the bay. Investigation showed that loss of oil pressure was due to a fractured oil screen cover plate gasket.

Four in a Row

Qualifying for the annual aviation award certificate of the Inter-American Safety Council is getting to be habitual with Pan American-Grace Airways, which last month received the award for the fourth consecutive year for operating 112,367,000 passenger miles and 6,830,039 plane miles over an 8,878-mile route system in Latin American last year without a single accident or fatality to passengers or crew. During the four consecutive accident-free years, Panagra had flown 354,815,951 passenger miles and 24,574,476 plane miles.

CIVIL AIR REGULATIONS

New Look for Pilots

Pilots can now have a New Look. The radio headset that has for so long been associated with aircraft pilots is not required equipment since May 1 on. The CAB has amended the Civil Air Regulations to permit the use of cockpit loudspeaker installations, which it has found to offer several advantages over the conventional radiotelephone headset Section 61.7804 formerly required the first pilot or second pilot of an aircraft to use while in flight or taxiing.

CONVAIR-LINERS GO INTO SERVICE
THIS SUMMER ON CONTINENTAL
In time for summer vacation travel...the 300 mile an hour, 40-passenger Convair-Liners will travel the Blue Skyway on the Kansas City-Denver; Oklahoma City-Tulsa-Wichita-Denver and El Paso-Albuquerque-Denver routes. Air conditioned, pressurized...these ultra modern air liners will offer passengers every advantage of air travel...at no additional cost.
CONTINENTAL AIR LINES

SAFETY SLANTS

THE REPORT of the CAB on Eastern's accident at Boston last winter points out that exit markings could not be seen inside the plane due to failure of the electrical system. This brings up another important subject—training for airport firemen in the location of both regular and emergency exits, how to open them from the outside and in general, "What the Well Informed Rescue Worker Should Know." The military did a fair job of training their airport emergency crews on these subjects and made charts and drawings available for study. The average airport fire chief and his crew are extremely anxious to do a good job. Many of them have a background of service with the armed forces in similar jobs. They are severely handicapped, however, in the lack of a good reliable set of instructions about modern transport aircraft. The DC-6, Connie, 202 and Convair are all post-war ships. Some of them are pressurized. Some have built-in passenger steps. Door operating methods vary; for example, there are the sliding doors on the Connie. It would seem like a good idea for an agency like the ATA or NFPA to get together a good text, complete with charts, pictures and diagrams, on the best way to get into a crashed air liner from the outside—how to do it quickly and safely. The firemen at LaGuardia last Decoration Day eve were handicapped by just this lack of know-how. They finally got in through a lavatory service door—never intended as an emergency exit, but it served well. If they had known of this door sooner, it is just possible that a few more might have been saved. The guide should also go into the location of such hazards as heaters, gas tanks, oxygen lines and similar features. Sounds like a big job, but it would be money and time well spent if it saved just one life some time.

• • • •

Two of the principal agencies reported as involved in disabling injuries to ramp mechanics are tow bars and gas hoses. Mechanics seem to have a facility for getting their feet under tow bars just before they drop them and gasoline service men, as well as mechanics, trip and fall over gasoline hoses spread under a plane. Hooking a tow bar on a nose wheel is a two-man job that calls for close cooperation between the partners. What the answer to gas hose accidents is no one seems to know. At least no one has come up with a good, foolproof method of stopping this type of accident. Perhaps you have some ideas.

U. S. Airlines Carry 73% Of Trans-Atlantic Traffic

By Keith Saunders

Last year was the second full year of the competition between foreign-flag and U. S. airlines flying across the North Atlantic, and the traffic figures for the year, released in May by the analyses division of the Civil Aeronautics Board's Economic Bureau, therefore afforded a good opportunity for comparing results. The comparison was generally favorable to the U. S. carriers.

Covering all the scheduled trans-Atlantic airlines operating into and out of New York City, the report showed that 194,113 passengers made the crossing last year via the eight carriers, three U. S. and five foreign, whereas the same airlines carried only 104,980 passengers across the Atlantic in 1946. This was a gain of 85%, and the trend was upward.

In the last six months of 1947, the 114,128 passengers carried by the eight lines exceeded the entire previous year's volume, represented an increase of 42.5% over the first half of 1947, and an increase of 70% over the travel in the last six months of 1946.

The U. S. carriers—Pan American Airways, American Overseas Airlines and Trans World Airline—carried most of the traffic last year, just as they had done in 1946, but the foreign carriers were beginning to make their competition felt.

Of the 194,113 trans-Atlantic air passengers last year, 141,703—or 73%—traveled via U. S. lines, and 52,410—or 27%—flew via the foreign-flag carriers. In 1946, the three U. S. lines had done better, carrying 87,477 passengers, which was 83.3% of the total, while the foreign carriers had carried only 17,503 passengers, 16.7% of the total traffic. In other words, the foreign lines were gaining some ground, after having overcome some of the competitive disadvantages resulting from their comparative equipment shortages the first year of operations. In 1946, the U. S. lines had carried five trans-Atlantic passengers to every one carried by the five foreign lines; last year, the ratio was less than 3-to-1 in their favor.

With reference to the United States' competitive position in North Atlantic air traffic, the CAB study said that, in general, it seems favorable, and that short-term prospects for maintaining this position also look good. The two-year study showed clearly that both the U. S. and the foreign carriers have secured traffic in the approximate proportions of the volume of service they have operated, and it seemed reasonable to assume that PAA, AOA and TWA would remain able to maintain a comfortable lead in the number of schedules operated over the North Atlantic.

Last year, 7,771 scheduled trans-Atlantic flights were operated, with the three U. S. carriers operating 5,644—72.6%—and the foreign lines operating 2,127 flights—27.4%. Pan American alone had more schedules—2,260—than all five of the foreign carriers combined, and AOA had only a few less.

In this respect, too, the U. S. airlines had lost a little ground, having operated 2,989 of the 3,670 trans-Atlantic schedules in 1946, or 81.4%, and each of the three U. S. lines had made more flights than all five foreign-flag competitors combined. However, the unavailability of good long-range transports in their own countries, coupled with the lack of sufficient dollars to buy much more U. S.-made equipment in the foreseeable future, made it appear unlikely that the foreign lines could go much farther toward narrowing the gap between their volume of trans-Atlantic schedules and the volume of services operated by the U. S. carriers.

SAS (Scandinavian Airlines System) led the foreign-flag lines in traffic last year, with 13,405 passengers, followed closely by BOAC's 13,335. Next came KLM Royal Dutch Airlines with 11,772, Air France with 10,562, and SABENA Belgian Air Lines with 3,336. These volumes of traffic bore a close relationship to the volumes of services operated by each of the five carriers, these being 603 by SAS, 526 by BOAC, 462 by KLM, 397 by Air France and 139 by SABENA. In 1946, KLM had been the top foreign passenger-carrier over the North Atlantic, with Air France in second place, BOAC in third place, and SAS fourth.

Again as in 1946, the number of aliens flying the North Atlantic was well over 50% of the total traffic volume—105,609, against 88,504 U. S. citizens. In 1946, the totals had been 49,778 U. S. citizens and 55,202 aliens. The latter continued to show a preference for traveling via U. S. airlines, 71,308 of them, or 67.5%, doing so. American citizens showed an even more marked preference for their own carriers, 70,395 of them, or 79.5% traveling last year either via PAA, AOA or TWA in crossing the North Atlantic.

The average number of trans-Atlantic passengers per flight for all the carriers last year was 25.0, representing a slight drop from 1946, when the average per flight was 28.6 passengers. The average for the three U. S. carriers last year was 25.1 passengers per flight, while that for the five foreign-flag airlines was 24.6. Passenger loads on flights into New York from across the Atlantic were somewhat higher than for eastbound flights, the average for the 3,934 westbound schedules being 30.2 passengers per flight, while that for the 3,837 eastbound schedules out of New York was only 19.5.

Summarizing, the CAB's trans-Atlantic traffic study, prepared under the supervision of F. H. Crozier, chief analyst, showed that:

Traffic over the North Atlantic (exclusive of Montreal-London services and an insignificant number of schedules out of Boston which do not originate in New York) is increasing steadily, as more services are made available.

U. S. flag lines are pretty well holding their own against five foreign airlines with regard to traffic volume and seem likely to continue to do so.

Citizens of other countries are flying the Atlantic in greater numbers than U. S. citizens, a trend which probably will continue until conditions in the European and Mediterranean areas become more settled and more attractive to vacationers.

Trans-Atlantic Air Traffic—1946-1947

(Via U. S. and Foreign Scheduled Air Carriers)

Carrier and Country	No. of Trips		% Total Trips		No. Passengers Carried		% Passengers Carried	
	1947	1946	1947	1946	1947	1946	1947	1946
American Overseas	2,061	1,059	26.5	28.8	47,276	29,115	24.3	27.1
Pan American	2,260	1,100	29.1	30.0	59,780	33,635	30.8	32.0
TWA	1,323	830	17.0	22.6	34,647	24,727	17.8	23.5
All U. S. Carriers	5,644	2,989	72.6	81.4	141,703	87,477	73.0	83.3
Air France	397	173	5.1	4.7	10,562	5,214	5.4	5.0
BOAC (Br.)	526	194	6.8	5.3	13,335	3,355	6.9	4.0
KLM (Dutch)	462	189	5.9	5.1	11,772	6,399	6.1	6.1
SABENA* (Belg.)	139	12	1.8	0.3	3,336	386	1.6	0.4
SAS (Scand.)	603	113	7.7	3.1	13,405	2,149	6.8	2.0
All Foreign Carriers	2,127	681	27.4	18.6	52,410	17,503	27.0	16.7
Grand Total U. S. and Foreign Carriers	7,771	3,670	....	....	194,113	104,980	....	....

* Not operating scheduled trans-Atlantic service in 1946.

TRAFFIC & SALES

American's Road Show

Numbers of American Airlines' salesmen were unable to attend the highly important week-long sales conference held at the company's Ardmore training center in April, so for the past several weeks the company has been taking the conference to the salesmen.

The entire conference was built around a series of pre-recorded sample calls demonstrating AA's new philosophy of air transportation selling. The conference took the form of a show, complete with lights, stage and sound effects. A group of sales executives acted the parts of salesmen discussing their week's work on a Friday afternoon with their manager. As each salesman started to discuss significant calls he has made during the week, the stage blacked out and a wire recording was amplified for the audience as a flashback to the saleman's actual experience. This method of presentation was such a success that American has been busy ever since flying the wire recordings to each of its five regions, where the show is being performed again for local sales personnel.

Walter Sternberg, general sales and traffic manager, said American's new philosophy revolves around a detailed analysis salesmen are making on each industrial call. Rather than confining themselves exclusively to potential air travelers within a firm, the salesmen are now conducting inquiries into each company's travel, shipping and mailing procedures to determine how the company can save money or increase efficiency through greater use of air travel, air mail and air cargo.

NEW SERVICES

TWA-Delta Interchange

Some airline officials have deplored the fact that air passengers too frequently have to change planes in order to reach their destinations. Beginning June 1, at least some passengers on TWA and Delta Air Lines planes will not have to change when traveling north of Cincinnati on TWA or south of Cincinnati on Delta.

Through an equipment interchange agreement first proposed by the two carriers in 1946 but not finally approved until recently, one-plane through service is now available for TWA and Delta passengers between Atlanta and Detroit, between New Orleans and Detroit, between Charleston, S. C., and Detroit, and between Jacksonville and Toledo, all via Cincinnati, the interchange point. When a northbound plane on Delta's Route 54 reaches Cincinnati, a TWA crew takes over and flies the plane on over its Route 58 to Toledo or Detroit. Delta crews take over at Cincinnati on southbound flights. Passengers remain in the same plane, without having to change from Delta to TWA equipment when northbound or vice versa on southbound flights.

Baby Lounge—Western Air Lines has installed a baby lounge at the Los Angeles Airport for the benefit of very small passengers . . . and their harassed mothers. It is equipped with cribs, a supply of diapers and other sundries for infants and toddlers, including toys and Mother Goose books. Mothers like the idea and so, apparently, do the kids. In the picture a stewardess is playing baby sitter for four between-plane youngsters.

International Services

British Overseas Airways Corp. on May 4 inaugurated a new combination land-plane-seaplane service between New York and Johannesburg, via London, using Constellation aircraft over the Atlantic and new British-built Solent flying boats from England to South Africa.

KLM Royal Dutch Airlines is now operating an Amsterdam-Teheran DC-6 service, via Rome, Istanbul and Baghdad, with departures from Amsterdam each Wednesday.

Trans-Canada Air Lines has advanced the date for inauguration of its North Star domestic transcontinental service from July 1 to June 1, due to unanticipated rapid delivery of the new equipment.

PASSENGER SERVICE

UAL Ready with Answers

The air traveler's chances of getting a prompt and accurate answer to a question asked of a United Air Lines employe will be much better this summer than ever before, and there's a reason.

Reason is that the 2,000-odd UAL employes who have direct contact with the public are now taking a "post-graduate" course of study covering airline operations generally and every conceivable question pertaining to the routing of passengers, connecting flights and other details of interest to the traveler. The course, first of its kind attempted by United, is designed to increase employes' knowledge of their company's service as well as the entire air transport industry, and in turn improve their efficiency.

65 Global Routings

Two or three alternative routings may suffice for most round-the-world travelers, but Pan American Airways wanted to be certain it could meet the needs of the most finicky and most unorthodox globetrotters, so it has announced 65 different round-the-world routings—all at the basic rate of $1,700. This variety was made possible through combinations of routings with two PAA affiliates, Panair do Brasil and China National Aviation Corporation. Five choices of itineraries are offered across Europe and the Middle East and 13 across the Pacific and Far East.

London Hotel Reservations

An arrangement whereby London-bound travelers can know before leaving this country what their hotel accommodations will be and what they will cost has been worked out by American Overseas Airlines and the American Automobile Association. The latter has 273 beds in London tied up nightly that may be reserved two weeks in advance, payable here in American dollars.

Fast Facts: What passengers should know to get the most out of air travel is described in an illustrated booklet entitled "Fast Facts for Passengers of Eastern Air Lines." New booklet discusses such details as how to check reservations for return flights, what type luggage to carry in plane, facilities for babies, and summary of EAL rules and regulations. Available at all EAL ticket offices.

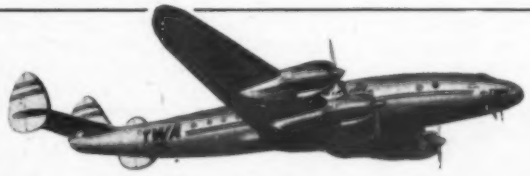
"Charlie's call to come quick sold me the Businessman's Airline"

"We *had* to put over the Jones deal. Recalling what our TWA Representative had said about convenient TWA schedules, Miss Forbes knew whom to call. Ten minutes later, I was riding to the airport.

"With so much on my mind, the trip *might* have been hectic. But TWA's courteous efficiency was amazing. The food was delicious, the hostess was charming. Time raced by. I arrived relaxed and ready to go.

"Charlie's meeting came off like clockwork. I thanked my lucky stars I chose TWA's Sky Chief. 'Never saw you so full of pep,' Charlie said after we closed the deal. 'Thank the Businessman's Airline,' I told him.

"Before my nap on the home-flight, I wrote a note to myself: 'Advise men to call TWA *first*—for *fast* and *comfortable* travel.' Then, sooner than I thought possible, I was home having dinner with the family."



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Airline-Airport Battle

The impending fight over fees and charges which the airlines will be required to pay for operating into and out of International Airport, New York (Idlewild) will be watched closely by aviation interests throughout the country.

Although the foreign international carriers have been asked to transfer their operations from La Guardia airport to International by July 1, not a single domestic airline serving the New York area has yet committed itself to the use of International. The reason is based on the New York Port Authority's plan for raising revenues at the airport.

Howard S. Cullman, chairman of the Authority, announced that the Authority would not enter into lease arrangements such as now control airline operations at La Guardia. Under existing leases, some of them renewable up to 1988, the airlines are charged on the basis of a schedule of landing fees. Under the Authority's proposed new plan, the airlines would pay use and service charges on the basis of a posted tariff which could be changed by the Authority whenever it felt the airlines were not paying their share of increased airport operating costs. The airlines are strenuously opposed to such a plan because it will not permit them to estimate their costs for any fixed period with any degree of accuracy.

As another revenue raising measure, the Port Authority has announced that there will be a central distributing system for gasoline and oil. The gasoline, which may be supplied by several companies, will be co-mingled.

Aside from depriving the airlines of their freedom of action in making the best deals possible for purchase of gasoline, both on a local and systemwide basis, the airlines are opposed to this central distributing system because they contend there is an element of safety involved. If a bad shipment of gasoline should get into the central storage tanks, the airlines, would have no way of tracing the supplier in case an accident resulted from the use of inferior fuel. To test all of the various shipments which might go into the central distribution system would be impractical, they contend, even if adequate testing facilities were available.

Airlines operating into the Washington National Airport during and since the war have used the central distribution system but they claim that it has cost them most of the $150,000 annual premium which the airport management has received for letting an exclusive contract. The arrangement continues in effect because present fuel shortages make it impossible for the airlines to get new contracts with individual suppliers. Tests of the gasoline are run at the Bureau of Standards—an operation which requires most of a day by the time the test reports are received.

First at Idlewild—Artist's sketch shows first permanent building to be built by Port of New York Authority at New York International Airport at Idlewild. It will be occupied by regional offices of Civil Aeronautics Administration and U. S. Weather Bureau. Foundation construction of the $4,500,000 steel and brick structure will begin on June 10, with the building scheduled to be ready for occupancy on April 1, 1949.

Rather than move to International where their future costs will be unknown, the airlines, if they are forced out of LaGuardia, would give consideration to moving to airports outside the Port Authority's jurisdiction. Two airports have been mentioned. They are Westchester and Teterboro. But before they are forced to move, it is believed they will seek court tests of the leases which they now hold for use and occupancy at La Guardia. Lawyers who have made a study of the situation believe the airlines would have to look to the City of New York for any damages which might grow out the Port Authority's failure to perform under the terms of the leases on which the Authority is sub-lessor. The reason is that under its charter the Port Authority cannot be sued.

So serious do the airlines regard this coming fight that they have hired the public relations firm of H. A. Bruno and Associates to carry their story to the residents of the New York area specifically and to the people of the country generally. The outcome of the fight with the Port Authority probably will establish far reaching precedents. The reason is that 22 of the larger cities of the country are banded together in the Airport Operators Council. The Council, in its first annual meeting in Boston this spring, adopted a program for standardization of use charges at public airports. Previously the Governor of Massachusetts had ordered a 3c gallonage fee in effect at Logan International Airport but his action, under state law, had to have the approval of the Massachusetts Aeronautics Commission. The commission vetoed the order.

The future of airline independence of action at airports throughout the country appears to hinge on the decisions relating to the use of New York International. The airlines contend that the equitable way to assess use charges is on the basis of landing fees. They contend that exaction of gasoline taxes at an airport has no bearing on the use made of the airport.

As Vice President Robert Ramspeck of the Air Transport Association explained it to a Congressional committee, the 4,000 gallons of gas which is taken aboard a plane at Logan airport for a flight across the ocean has no bearing on the aircraft's use of the airport. Another plane, on a tight turn around schedule, might make 10 times as much use of the airport yet buy all of its gasoline from other terminals on its route. —*By* GERARD B. DOBBEN

CAA's Airport Progress

In May, 1947, Twin Falls, Idaho, became the first city in the country formally eligible for a federal-aid airport grant. Checking back last month on accomplishments of the 12 months since approval of the Twin Falls grant, the Civil Aeronautics Administration found that the airport program was moving along at a fairly steady clip, though not as fast as it or some of its critics would like.

The year's accomplishments consisted of approval of grant offers on a total of 275 projects involving federal-aid funds to the amount of $23,225,001. These included grants for construction or improvements of 84 Class I airports, 74 Class II fields, 87 Class III's and 30 of Class IV size or larger.

Most of the grants were in amounts from $5,000 to $50,000 and for the most part covered federal-aid contributions toward a single phase of airport construction or improvement, such as land acquisition, grading, construction of runways, installation of lighting, or pro-

vision of drainage systems. Many of the airports would receive additional grants in next year's program.

Largest federal-aid grant approved during the year was one of $897,537 for extensive work in connection with the enlargement of the Clark County Airport, at Las Vegas, N. M., from Class III to Class V size. Other large grants included: Seattle-Tacoma, $850,000; Baltimore (Friendship Church Airport), $650,000; Goodwin Field, El Dorado, Ark., $578,000; Detroit (Wayne-Major), $506,910; Phoenix (Sky Harbor), $550,097; Denver (Stapleton Field), $500,000; Los Angeles Municipal, $455,459; Albany (N. Y.) Municipal, $350,000.

Fort Smith (Ark.) Municipal, $208,835; Pine Bluff, Ark., $256,960; Beaumont, Tex. (Jefferson Co. Airport) $209,147; St. Joseph County (Bendix Field), South Bend, Ind., $200,000; Charleston, S. C., $175,000; Port of Portland, Ore., $110,000; Santa Monica, Calif., $107,097, and Westchester County (N. Y.), $100,000.

Funds allocated to the 30 Class IV and larger fields totaled only $6,536,787. but this phase of the program did not get started until late last summer, due to technicalities of the Federal Airport Act. Furthermore, the first year's program was intended to deal largely with airports of the Class I, Class II and Class III sizes.

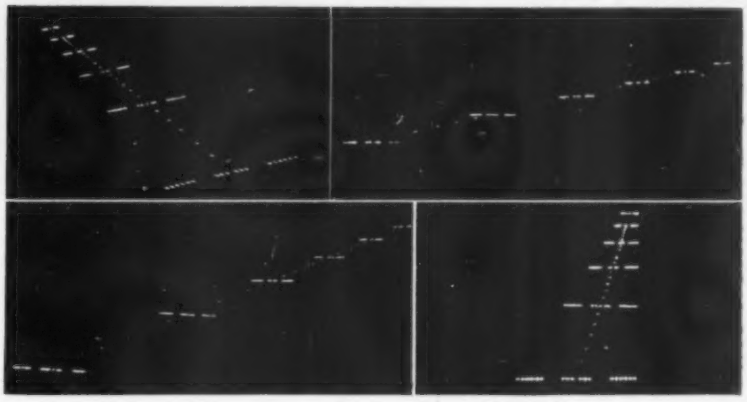
Indicative of the way the program is moving along is the fact that only 132 grant-offers totaling $13,389,968 had been approved as of last Jan. 1, which means that more projects were approved in the first four and one-half months of this year than in the last seven and one-half months of last year.

By late May, 318 project applications had reached CAA offices in Washington, of which 275 had received final approval. The remaining 43 were being processed toward the grant-offer stage.

L.A. Airport Expands

As larger aircraft and heavier air traffic require more and longer runways and increased ground facilities, the problem of acquiring sufficient adjacent acreage to meet expansion requirements is becoming a major worry of the operators of many municipal airports. Los Angeles recently eased its worries on this score by acquiring an additional 404 acres (at a cost of $838,000) northwest of Los Angeles Airport. This acquisition was the last required for development of a 2,500-acre facility in accordance with the city's long-range airport master plan.

With $1,000,000 in Federal-aid airport funds available for the work, bids are to be let shortly for the grading of all the airport property west of the present airport boundary. Two take-off runways will be built on the newly-acquired property when the grading has been completed. In addition, the master plan calls for construction of a permanent terminal building to replace the temporary terminals now used.



Photograph from 'Aeroplane' magazine.

British Cross-bar Lights—British authorities see considerable promise in this new approach lighting theory. A single row of sodium lights is aligned with the runway and crossed at regular intervals with shorter rows. Pilots are reported to see a more readable substitute horizon than with single-row or V-type lights. Number of lights decreases as the threshold is approached, giving an indication of range, and cross-bars appear of uniform width as long as pilot maintains proper rate of descent.

Airport Exhibits Planned

Aeronautical Exhibits, Inc., has been formed with the stated purpose of developing at major airports certain exhibits and services concerned with aviation and allied fields. H. George Harris, formerly advertising and sales promotion manager of the Aviation Tire Division of U. S. Rubber Co., is president, and Osborne B. Bond, until recently business manager of the Elks Magazine, is v.p. and treasurer. Temporary offices are at 60 East 42nd St., New York City.

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American's 'Largest' Hangar

If Chicago ultimately becomes the air center of the world, as believed in some quarters, American Airlines will be well fixed for working space there. This was assured last month when American finished moving into what it describes as the largest commercial airline hangar in the country, at 5245 W. 55th St., Chicago.

Built over a period of two years at a cost exceeding $3,000,000, the hangar provides over two acres of space for housing and maintaining American's Chicago-based aircraft, as well as three floors of modern offices, stock rooms, restaurants and a medical center.

Consisting of two bays, each affording a clear span of 275 feet and a depth of 175 feet, and each having an area of more than 45,000 sq. ft., the hangar is so large that the four or five four-engined aircraft which crowd the average hangar look small inside it. Each of the two bays has ample space for the simultaneous servicing of eight of American's new Convair Liners or six DC-6's and two Convairs.

Of thin-shell and arched-rib construction, the building contains enough concrete to pave a two-lane highway more than five miles in length. The concrete arch roof is only 3½ inches thick and is topped with complete weather insulation, including aluminum paint which keeps temperature variance at a minimum.

American Airlines' new $3,000,000 hangar at Chicago provides more than two acres of space for housing and maintaining aircraft, as well as offices, stockrooms, restaurants, and a medical center.

The two hangar bays face the airport side, while the street side of the building is occupied by every type of office and maintenance facility, including tool rooms, replacement part stockrooms, a huge (7,000 sq. ft) Sky Chief flight kitchen and a cafeteria. The ground level of the hangar encompasses almost three acres, including 122,309 sq. ft. of clear working space. The bays are divided, with the east bay for line service of all types of aircraft, the west bay devoted to major repair or maintenance work. An expansive stockroom faces each bay.

The opening span of each bay is so great that with only one door section opened there is almost space enough to admit a DC-4 or DC-6. Each span of doors consists of seven leaves, each of which weighs six tons. Electrically operated, the four sections of doors—a total of 168 tons of weight—can be put into motion simultaneously. All are 41 feet tall, but an additional tail-gate opening at the top provides entrance for any aircraft with a tail up to 54 feet tall. A special snow and ice melting system of iron pipes through which hot water mixed with anti-freeze solution can be circulated makes possible the operation of these doors during winter weather conditions.

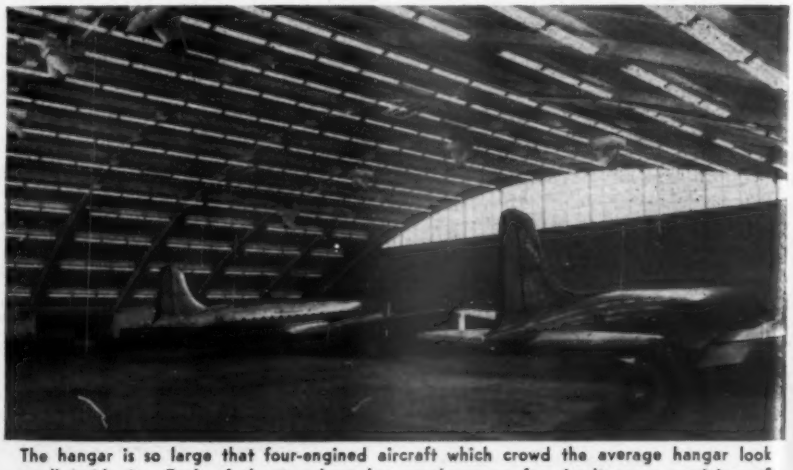
Heating of the hangar is accomplished through large overhead revolving type unit heaters. The system is one of high-pressure steam heat, operated by oil burning units. Cold cathode lighting fixtures located close to the ceiling level provide shadowless illumination of 15 foot candle power over the entire hangar floor. This is the first instance of adaptation of such lighting to a large aircraft hangar.

Set into the floor of each bay are outlets to provide 110 or 220 volt electric current as well as compressed air connections, and additional outlets are spaced along the side walls, so that no more than 65 feet of cord is required to work on any section of a plane in any part of either bay. More than 500,000 feet of wire have been used to provide illumination and power throughout the hangar.

All activity in the hangar is under the direction of T. G. Williams, manager of operations for American.

Rescue Boat Service

The Logan International Airport has put a rescue boat into service. The 65 foot craft, powered by two 600 h.p. engines can do 35 knots and is manned on a 24 hour basis by a skeleton crew, with additional men assigned to respond from the regular airport emergency crew. Radio communication will enable the boat to cooperate with the tower at Logan and with the Navy's Squantum emergency boat. More water-bordered fields need this kind of protection.



The hangar is so large that four-engined aircraft which crowd the average hangar look small inside it. Each of the two bays has ample space for simultaneous servicing of 8 Convair Liners or 6 DC-6's and 2 Convairs.

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George Fowler, Manager
In Louisville • THE KENTUCKY
James E. Rushin, Manager
In Greensboro • THE O. HENRY
Leon Womble, Manager
Carling Dinkler, President

Airlines File 1947 Salary Reports with CAB

The Civil Aeronautics Board has received Schedule E reports showing officers' and directors' salaries for the following airlines during calendar 1947:

All American Aviation

	1947 Salary	Change from 1946
Robert M. Love, pres. and dir.	$15,000	.....
Charles W. Wendt, v. p., treas. and dir.	10,000	.....
Halsey R. Bazley, v. p.-operations	10,000	.....
David L. Miller, secy. and dir.	5,250	+ 450
Harry S. Fries, asst. treas. and asst. secy...	6,225	+ 225
Walter C. Gebelein, comptroller	6,450	+ 450

Eastern Air Lines

	1947 Salary	Change from 1946
E. V. Rickenbacker, pres. and dir.	$35,000	.....
Paul H. Brattain, 1st v.p. and dir.	22,500	+2,500
S. L. Shannon, 2nd v.p. and dir.	20,000	+2,500
L. P. Arnold, v.p.	15,000	+3,000
M. M. Frost, v.p.	20,000	+2,500
Stanley de J. Osborne, v.p.	20,000	—1,250
T. F. Armstrong, secy., treas. and dir.	15,000	+3,000
J. W. Moore, asst. secy., asst. treas. and dir.	9,600	+ 600

In addition to the above listed salaries, the following amounts were received as bonuses and indirect compensation: E. V. Rickenbacker $2,028; Paul H. Brattain $1,528; S. L. Shannon $1,313; L. P. Arnold $407; Stanley de J. Osborne $373; T. F. Armstrong $1,193; J. W. Moore $1,036; Everett R. Cook $400; J. M. Cox, Jr. $300; George B. Howell $400; Hugh Knowlton $600; G. H. McCarthy $500; W. L. Moore $600; Stuyvesant Peabody, Jr. $300; Paul E. Reinhold $700; Laurence S. Rockefeller $700.

Mid-Continent Airlines

	1947 Salary	Change from 1946
J. W. Miller, pres. and dir.	$19,999	+ 4,040
J. C. Collins, v. p. and secy.	9,600	+ 966
J. A. Cunningham, v.p-op.	10,800	+ 1,451
H. W. Coburn, v. p.-traf. and advt.	9,000	+ 1,490
C. H. Calhoun, v. p.-eng. and maint.	9,000	+ 869
W. L. Walker, treas.	6,250	.....
V. D. King, asst. treas.	4,787	.....
). H. Carr, asst. secy.	3,675	.....

Northeast Airlines

	1947 Salary	Change from 1946
George E. Gardner, pres.	$10,000	.....
Paul F. Collins, chairman of Board	6,000	*
Milton H. Anderson, v. p. and dir.	15,000	— 228
Leland W. Miller, v. p., treas. and dir.	7,776	.....

* Received $16,320 in 1946 as president and chairman

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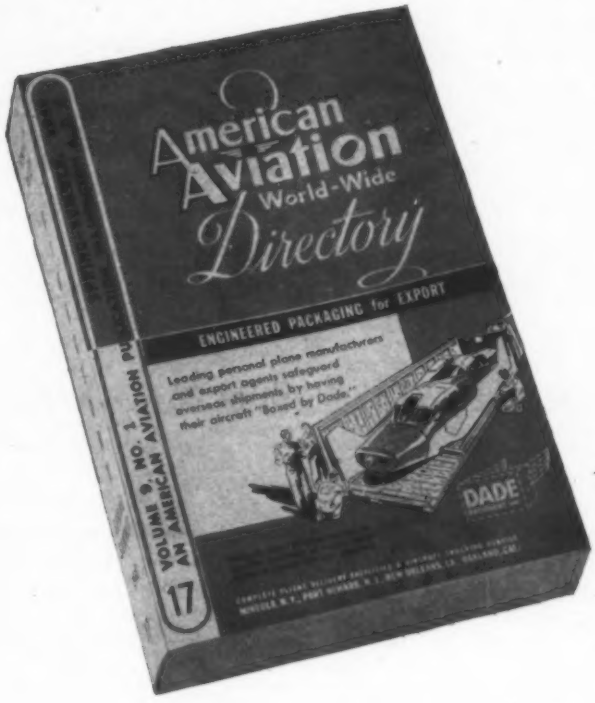
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U. S. International Airline Revenues & Expenses for Calendar 1947

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	U S MAIL REVENUES	FOREIGN MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
American	$ 3,602,525	$ 2,822,929	$ 42,795	$ 34,599	$	$ 482,601	$ 73,875	$	$ 3,964,085	$ 2,036,554	$ 1,927,530	$ -361,560
Amer. O'Seas	20,195,819	15,017,154	2,327,624	788,118	1,160,203	. . . .	277,684	43,230	21,874,260	9,747,872	12,126,388	-1,678,441
C & S	913,675	447,539	443,811	. . . .	. . . .	14,467	7,697	. . . .	955,092	432,970	522,122	-41,417
Colonial	495,770	260,276	233,931	. . . .	129	. . . .	1,435	. . . .	587,253	236,847	350,406	-91,483
Eastern	884,798	812,089	13,673	. . . .	. . . .	47,774	10,852	399	998,903	543,226	455,677	-114,105
National	669,274	593,375	4,192	. . . .	44,768	. . . .	26,878	. . . .	804,871	282,146	522,726	-135,598
Northwest	6,831,192	3,103,961	2,617,188	134,311	31,883	143,921	47,483	746,178	6,906,483	3,242,093	3,664,390	-75,291
Panagra *	13,599,425	9,642,518	1,010,233	1,049,805	1,266,009	. . . .	437,409	10,201	15,609,992	7,078,439	8,531,553	-2,010,567
Pan American												
Latin Amer.	58,577,553	42,173,314	2,048,030	2,443,035	7,857,188	. . . .	2,007,797	969,176	58,473,896	23,291,881	35,182,015	103,657
Atlantic	39,532,454	26,632,361	7,999,116	1,511,449	2,193,800	. . . .	496,030	451,885	36,414,602	17,783,999	18,630,603	3,117,852
Pacific	26,074,955	13,681,062	9,913,161	328,207	1,830,686	. . . .	193,362	44,140	23,850,832	12,599,957	11,250,875	2,224,123
Alaska	5,785,645	2,931,825	2,575,448	. . . .	228,662	. . . .	36,869	8,897	5,390,571	2,466,490	2,924,081	395,075
TWA	29,181,423	20,172,328	2,976,929	2,255,691	2,184,202	. . . .	721,716	540,599	31,255,870	13,051,478	18,204,392	-2,074,447
United	2,373,535	2,213,825	90,589	. . . .	40,286	. . . .	28,494	. . . .	2,020,029	967,758	1,052,270	353,506
TOTALS	208,718,043	140,504,156	32,296,720	8,545,215	16,837,816	688,763	4,367,581	2,814,705	209,106,739	93,761,710	115,345,028	-388,696

* Figures are preliminary

NOTE: Data in above tabulations were compiled by American Aviation Publications from monthly reports filed by the airlines with the Civil Aeronautics Board. Figures for American Airlines include that carrier's services to Mexico but not to Canada; for C & S to Havana; for Colonial to Bermuda; for Eastern to Puerto Rico; National to Havana; Northwest to Alaska, and United to Honolulu. Operations of U.S. carriers into Canada are included in domestic reports to CAB, in accordance with CAB filing procedures.

U. S. International Airline Revenues & Expenses, 4th Quarter 1947

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	U S MAIL REVENUES	FOREIGN MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
American	$ 927,081	$ 671,312	$ 9,666	$ 12,203	$	$ 175,560	$ 17,468	$	$ 1,031,239	$ 543,526	$ 487,714	$ -104,159
Amer. O'Seas	4,396,702	2,362,853	1,397,665	161,522	245,875	. . . .	58,942	26,142	4,558,397	1,517,660	3,040,737	-161,695
C & S	231,808	113,006	114,532	. .	. .	2,316	1,907	. . . .	226,137	98,434	127,703	5,671
Colonial	407,303	172,203	233,911	. .	22	. . . .	1,147	. . . .	385,431	163,403	222,028	21,873
Eastern	213,013	185,407	5,809	. .	. . . .	19,582	2,215	. . . .	209,291	90,176	119,114	3,723
National	153,486	119,754	1,229	. . .	27,464	. . . .	5,039	. . . .	200,902	81,344	119,558	-47,416
Northwest	2,589,179	1,044,848	1,102,088	92,499	7,352	78,052	23,752	208,127	2,547,514	1,125,329	1,422,184	41,666
Pan American												
Latin Amer.	14,600,569	10,333,734	178,362*	616,929	2,358,143	. . . .	599,429	162,021	13,892,425	4,870,649	9,021,777	708,143
Atlantic	12,739,737	7,303,665	3,786,370*	418,545	739,867	. . . .	166,861	215,371	11,885,470	6,559,382	5,326,088	854,267
Pacific	7,937,245	4,019,361	3,175,359*	97,724	546,278	. . . .	64,920	14,262	7,840,816	4,040,525	3,800,291	96,429
Alaska	1,353,390	658,218	617,248*	. . .	66,888	. . . .	8,601	1,237	1,139,913	398,896	741,017	213,477
TWA	8,067,494	4,924,819	1,623,264	623,561	588,347	. . . .	207,321	72,565	9,516,175	4,077,864	5,438,311	-1,448,681
United	663,122	603,005	34,564	. . . .	16,710	. . . .	8,465	. . . .	741,931	370,854	371,077	-78,810
TOTALS	54,280,129	32,512,179	12,280,087	2,022,983	4,587,946	275,510	1,166,067	699,725	54,175,641	23,938,042	30,237,599	104,488

* Estimated

U. S. Feederline Balance Sheet Data as of Dec. 31, 1947

AIRLINES	TOTAL ASSETS	CURRENT ASSETS	INVESTMENTS & SPECIAL FUNDS	OPERATING PROP & EQUIPMENT	DEFERRED CHARGES	CURRENT LIABILITIES	LONG-TERM DEBT	DEFERRED CREDITS	OPERATING RESERVES	CAPITAL STOCK	SURPLUS
Challenger	$ 498,648	$ 124,330	$ 3,493	$ 290,795	$ 80,030	$ 237,302	$ 69,943	$ 349	$ 3,963	$ 276,291	$ -89,200
Empire	480,229	125,171	500	239,205	5,547	161,445	125,000	226,665	. . . .	336,700	-369,581
Florida	693,159	291,298	. . . .	278,644	120,183	57,210	253,933	8,186	. . . .	187,228	186,601
Monarch	760,069	239,868	. . .	430,286	87,369	480,428	191,645	581	. . . .	468,540	-381,124
Pioneer	1,167,927	572,016	1,011	532,284	62,265	194,698	165,000	12,720	80,000	97,000	618,508
Southwest	1,232,597	287,846	5,537	897,319	41,894	630,860	499,300	6,243	21,841	11,696	62,656
Trans-Texas	1,221,868	461,857	110,618	363,322	158,382	239,728	32,646	101	. . . .	1,000,000	-90,607
West Coast	1,209,858	340,482	. . . .	559,812	176,705	158,035	250,000	2,479	. . . .	187,371	611,972
TOTALS	7,264,355	2,442,868	121,159	3,591,667	732,375	2,159,706	1,587,467	257,324	105,804	2,564,826	589,225
					Helicopter	Mail Service					
Los Angeles	338,490	54,967	10	203,203	78,953	7,578	75,000	. . . .	. . . .	294,000	-38,088

NOTE: All data in above tabulations are compiled from official reports of the airlines to the Civil Aeronautics Board.

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The rates for advertising in this section are as follows: "Help Wanted," "Positions Wanted," "Aircraft Wanted or For Sale," and all other classifications $1.00 a line, minimum charge $4.00. Estimate bold face heads 30 letters and spaces per line; light body face 40 per line; box numbers add two lines. Terms, cash with order. Forms close 20 days preceding publication date. Rates for display advertisements upon request. Address all correspondence to Classified Advertising Department, AMERICAN AVIATION PUBLICATIONS, 1025 Vermont Avenue, NW., Washington 5, D. C.

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WINGS OF YESTERDAY

25 Years Ago

The Air Mail Service of the Post Office Dept., on May 15, 1923, celebrated the fifth anniversary of its inauguration by recording nearly 6,000,000 miles flown.

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The London-Berlin airway was officially inaugurated April 30, 1923. The service was jointly operated by the Daimler Airway Co. and the German Aero Lloyd.

10 Years Ago

(In AMERICAN AVIATION)

The Post Office Dept., during National Air Mail Week, operated approximately 1,700 feeder air mail routes.

BOOKS

JET PROPULSION IN COMMERCIAL AIR TRANSPORTATION. By Robert E. Hage. 91 pages. Princeton University Press, Princeton, N. J. No price given.

Every aeronautical engineer will be keenly interested in Mr. Hage's discussions of jet propulsion for transport aircraft. The book comprises material given in the first series of Edwin G. Baetjer II Memorial Lectures at the School of Engineering, Princeton University.

Mr. Hage concludes that turbojet transports are quite feasible at this stage of knowledge of jet power and presents an impressive array of data and graphs to support his views. He discusses basic power plant characteristics, basic aerodynamic characteristics, the case for the turbojet commercial transport, and supporting data.

THE FOWLER FLAP. An Engineering Handbook. By Harlan D. Fowler. Wetzel Publishing Co., Inc., 524 So. Spring St., Los Angeles 13, Calif. 90 pp. $5.00.

Aeronautical engineers should find much to interest them in this handbook on the Fowler flap, written by the man who played the major role in its development. This flap, which was under development for more than 20 years, has been adapted to 30 different aircraft types, including such World War II planes as the B-29 and the P-38. New transport types using it include the Convair Liner, the Boeing Stratocruiser and the Lockheed Constellation and Constitution.

Mr. Fowler, who is an associate fellow of the Institute of Aeronautical Sciences, devotes this book to a comprehensive analysis and exposition of the principles and applications of the flap, together with numerous tables, photographs and engineering drawings. This volume should constitute a worthwhile addition to the library of any engineer.

"Guide for Federal-Aid Airport Sponsors" is available from the American Road Builders Association, 1319 F St., NW, Washington, D. C. ($1 per copy) as Bulletin No. 136. The pamphlet includes a digest of CAA's rules and regulations, summarized by W. R. Macatee, manager of ARBA's airport division.

Lookee, Here, Bub—Seldom has an error of omission evoked such irrefutable response as this. With suppressed ire but undisguised indignation, TWA ticket agents Chuck Townes (left), Betty Dunn and Tony Radice point to evidence contradicting the statement in AMERICAN AVIATION'S April 1 issue that only three overseas airlines—not including TWA—have arrival and departure boards at La Guardia's international terminal. When the sputtering subsided, they declared that the board has been up since Jan. 24 . . . which explains everything. This magazine's observer passed through the terminal on Jan. 16.

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